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What Ails Honey?

By Walter H. Hull

DID it ever occur to you that: Honey tastes better than sugar, yet sugar is vastly preferred by the buying public?

Honey is more healthful, yet a health-conscious nation eats sugar by the pound and honey by the half ounce—or less?

Honey ranks sugar a million years as food, yet sugar is better known?

Honey is gathered and stored by insects, as against expensive man labor for sugar, yet sugar sells for one-fourth the price of honey?

But—sugar is a standard product. Honey is not. Production, manufacture, sale (and we might almost say consumption) of sugar are standardized. Carload or carton, it is the same; you know what you are getting when you buy it, and what you are eating when you eat it. But honey—well, this product known as honey has more colors, taking the country over, than Joseph's coat, and about three flavors to every color. Adventure, testing the unknown, is all right in its place, but there are times, when a man opens his mouth to eat, that he likes to know beforehand what the stuff he puts in there is going to taste like.

It occurs to me that these facts might have something to do with the honey market's well known dyspeptic condition; likewise with the hard sledding found by the American Honey Institute and other worthy agencies in raising money for national advertising of honey.

For relief, a central clearing house is indicated, one that can rigidly maintain standard grades so that the public may be educated to a few of the best, and the others inexorably consigned to other uses.

No, I don't claim that this idea is original with me. Neither are ipecac, quinine, castor oil original with the doctor who recommends them. This remedy has cured other businesses of like ailments and there is every reason to believe that the honey business

Grading of the product and offering a uniform article to the trade has done much to solve the problems of marketing for many agricultural products. The greatest difficulty now confronting the beekeeper is the great variation in the color and quality of honey from different sources.

will attain health and lustiness by following the same regime.

Remember when molasses was sold in hogsheads to the retail storekeeper and he parcelled it out by the quart and the gallon to his customers? And how the three or four inches of sugar that settled to the bottom of the hogshead was given away to those who were on the "inside" and knew when the hogshead was about to be empty? Do you think that this "molasses sugar" was given away because it was inferior to straight molasses? Not at all. As a matter of fact it was superior both in food value and in flavor and was given away even in that unstandardized day solely because it was an "odd lot," not standard. Presently it disappeared entirely from the trade, just as much of the honey now offered for sale must be eliminated from the grocery trade before much progress can be made in establishing honey as a staple product in general use by the public; for a great deal of the honey now offered for sale is in the same category as that "molasses sugar" of old time, which even the most tight-fisted merchant realized would cost more to sell than it would bring in return.

Certainly the honey advertising campaign will go haltingly so long as the fifty or a hundred (I don't know how many there are) different grades and flavors of honey are offered in-

discriminately under the name "Pure Honey."

All modern business, so far as I can see, is based on educating the public to call on you for certain definite things in the giving of which there is a margin of profit. Any change either in kind or quality of what you offer calls for a corresponding change in the "curriculum"—in what you have taught the public to expect. This educating of publics is at best tremendously expensive, so much so that the least unnecessary item in that direction is shunned like poison by all good business men. Changes there must be, of course; the world moves and business must move with it. And that is exactly what successful business does—moves **with** the crowd, just so much at a step, and no more. It occurs to me that the whole thing is a lock-step procession and that those who keep most exactly in step are the ones that get the fewest bumps. To lag behind means to be dropped utterly, while to rush ahead is equally disastrous. No wonder business is conservative.

We can agree, then, that advertising is, first, essential; second, expensive. Hence the obvious and—since funds for this purpose are by no means unlimited—imperative need of concentrating on a few of the best grades of honey for the retail trade and finding some other outlet for the others. It seems to me that it is an axiom of business that the only kind of product one can afford to advertise is a standardized product of uniform high quality. (**Standardized**, because uniform quality can be maintained in no other way.)

This, I believe, is why the present movement for nation-wide advertising of honey has hit so many snags and has not received greater support. The average honey producer knows there is something wrong with the picture even though he cannot place his finger on the exact spot. He has

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a feeling that to advertise honey in general like that is too much like aiming at a flock of ducks in general instead of at some particular one. The very name "honey" is itself too general in meaning. Scarcely two people out of any fifty that you might pick at random from a crowd would have the same idea of what you mean when you mention honey. There may be isolated sections where this is not true, but the rule holds.

A Bartlett pear is mighty fine fruit. A quince is all right in its place, too. But how many of either would the public consume if they were both sold merely as "fruit," with no distinction made between them, and the customer never knowing which he was going to get when he bought? How many peaches and grapefruit would be sold if they likewise were known only as "fruit" and handed out indiscriminately to the buyer?

A short time ago a Washington, D. C., newspaper (The Washington News) carried a lengthy article extolling the merits of honey as a health food. It was written by a doctor who was evidently sincere in his desire to tell the truth—so sincere that he ended his article by saying that the reason more honey was not used was because of the great amount of adulteration!

Now, there has been a great lot of honey in the Washington markets this year, but all that I have seen (and I have walked miles in the search) has borne the label of someone whom I knew personally or whose standing in the trade precluded any suspicion of adulteration. So far from there being a great deal of adulteration, I am convinced that there was practically none. Yet I still think the writer of that article was sincere. He believes in the adulteration of honey just as your average plain citizen believes in it. For this reason: Nearly everyone knows what honey is. Yes, sir! some time in his life he has tasted it, perhaps actually eaten some. Therefore when he goes to the market to buy honey he knows exactly what it ought to taste like. But when he finds that this article labeled "honey" which he has bought is different from what he remembers as honey, as the chances are fifty to one that it will be, he is (and quite naturally) convinced that the stuff he has bought is adulterated. He may admit that it tastes good. But the idea of adulteration sticks and his appetite for honey languishes.

That is why it seems to me that the establishment and rigid maintenance of definite market grades of honey is so essential to the success of any advertising campaign, no matter how well supported or vigorously carried out. To neglect that factor is to shoot off good powder and shoot

at blue sky in the random hope of bringing down a duck. It is a choice between scattering the available resources over some fifty grades of honey or concentrating those resources on some four or five.

Whatever the rules and restrictions made for the grading of honey, there will be low grades and off grades sold as first-class stock unless the work is taken in charge by a responsible organization. We come then inevitably to the conclusion that if honey is to be advertised on a national scale—or on a smaller scale, for that matter—the organization carrying on the campaign must confine its advertising to its own product or that over which it has direct control, since only in this way can the standards necessary to make the advertising effective be maintained. And as a corollary of this conclusion we have the further conclusion that any campaign for the advertising of honey in general cannot be expected to bring results commensurate with the time and expense involved; because, in the first place, this general advertising covers too wide a field to be effective—too many different grades and flavors; and, in the second place, there is so much low grade and off grade honey crowded onto the market in many sections of the country that it counteracts to a large extent the benefit of the advertising.

In other words, you national honey-advertising associations can't afford to give the free lance beekeeper any free advertising for his product. The question of whether you should or should not help him does not enter into it at all. The fact is that such advertising does not help him enough to make it worth while. And the reason it does not help him enough to make it worth while is because his product will not stand for it—can't be depended on to make the grade.

"If this be treason, then," as Patrick Henry said, "make the most of it." And I suppose it is treason in a way, for I am one of those free-lance beekeepers myself. Last summer I bought, with borrowed money, the crop on 250 hives, mostly section honey, and when it turned out that more than half of it was mixed with granulated honeydew I was confronted by a nice, complicated little problem of whether to crowd that so-called honey onto the market or go completely broke and fail to repay the loan as promised.

Well, the loan is paid, and I still have several stacks of supers full of those sections of honeydew. But I am not the only one that has troubles of that sort, and the net result, to put it politely, is not conducive to a strengthened honey market. So, speaking for the free-lance operators, I would urge you not to spend

any money advertising honey for our benefit. Even without the honeydew troubles, our crop here last year was a combination of mince-meat and hash; I found supers of pure honey in which scarcely two sections were alike in color, or in flavor either, so far as I could tell by sampling.

But here is a tip for you organization people. If you could take our crop, grade it properly, dispose of the off grades where they would not weaken the market, and get us a fair price for the whole, quality considered, some of us free-lancers would feel a whole lot more like tying up to the organization.

Bee Sting Poisoning May Be Protein Poisoning

By Ellsworth A. Meineke

We were very much interested in the letter from Iowa, on page 29, giving an account of the effect of bee stings on a member of a beekeeper's family, since it resembles my own case, which was diagnosed as protein poisoning, after many examinations.

A year ago last October I had violent coughing and strangling spells resembling asthma, but no hay fever symptoms, which are supposed to precede asthma. A complete hospital examination disclosed a metabolism rate of minus 42, normal being plus 33. This was lower than any recorded case and it came up to plus 14 gradually about spring, only to drop to minus 23, the last test, in October, being minus 11. I had no choking attacks from February, 1930, to October, 1930, at which time they occurred again and were relieved by injections of adrenalin.

During all this period I have been taking thyroid extract and have been able to do only the lightest work without tiring. A few stings during the summer had no noticeable effects, but when the trouble started this fall we took scrapings from observation hives (particles of wax and refuse that drop to bottom), which was analyzed at the hospital and injected into my arms in varying quantities. Extreme redness, swelling, and soreness resulted, indicating that this is at least part of the source of my trouble. A serum has been made and I had my first dose last Tuesday, but have had no ill effects. It is hoped this will effect immunization, but results are uncertain.

I have gone into fairly complete detail, as I am most anxious to be of some help to anyone who has suffered in a similar way. Until quite recently, my physician was convinced bee stings were the source of trouble and tried the beeswax tests only as a means of exhausting all possibilities.

If it is definitely decided that bee stings are the offending principle in this lady's case, it is perfectly pos-

sible, by the serum method, to desensitize her.

The main difficulty in getting at the root of the trouble is the extreme scarcity of recorded similar cases, the pathologist in my case finding only one old case, in California, after combing university, medical and Crerar libraries.

If you will pass on this information it may help, and I shall be more than glad to help in any way possible.

Illinois.

Comb Honey Market Will Be Based on Wrapped Honey

By R. F. Remer, Secretary, Sioux Honey Association

I was interested in reading the views of Carl E. Killion respecting the cellophane wrapper for comb honey, as printed on page 61 of your February issue.

It is the writer's opinion that, irrespective of the beekeeper's desire to eliminate the expense and labor connected with wrapping comb honey, the future comb honey market will be based upon wrapped honey and it will be the producer and marketer who keeps in step with this forward movement in marketing this fancy product in a sanitary and attractive manner who will profit most. The old stained, dusty, fly-specked section of honey, setting on the grocer's counter, musing up the entire surrounding space by leakage, we believe, is doomed to the discard—where it rightfully should be.

Owing to the unsanitary conditions which surrounded the marketing of unwrapped comb honey, this company made no effort to sell any quantity of it, but, realizing the potential market for a high grade and sanitary package of comb honey, we are contemplating some real effort in this direction in the future. Iowa.

Saskatchewan Moving Forward

The report of the provincial apiarist of Saskatchewan indicates a substantial growth of honey production in that province. Beekeeping is reported as principally a sideline business on the farms, but is increasing as a commercial venture. Increased use of sweet clover as a farm crop is reported, which insures better bee pasture. The province offers an important market for live bees in packages, and this trade is increasing each year. There is but little disease in the province and this well under control. The honey is sold in local markets at prices above those generally prevailing. Saskatchewan honey has captured a liberal share of prizes at the Royal Fair at Toronto. R. M. Pugh, provincial apiarist, is to be congratulated on his showing.

Federal Farm Board Assists Texas Honey Producers Cooperative Marketing



H. E. Coffey, Field Agent,
Federal Farm Board

Beekeepers in other states as well as Texas will be interested to learn of the latest developments in the cooperative movement for the marketing of honey in the Lone Star state. Texas producers were among the first anywhere to successfully market honey cooperatively. For a number of years there has been no honey marketing agency controlled by beekeepers within the state, but producers over the state have never given up hopes for a producer owned and controlled selling agency.

In March, 1930, the Lone Star Honey Producers' Association was incorporated. Since that date the Association has been seeking means whereby it could function. One of the first needs which all the directors agreed must be supplied was someone to go out among the producers and talk the Association and invite them to sign the marketing agreement of the association. In response to an appeal made to the Farm Board, a field agent was recently supplied the Association for a temporary period. The writer is filling this position and has been active since January 21, when the appointment was made.

Through assistance of the Extension Service of Texas, meetings are being called in the various counties where there are county agents and a sufficient number of beekeepers, and the objects of the Association are explained to the producers at such meetings. Opportunity is also afforded, to those who wish to, whereby they may become members of the Association and market their honey

through it. Where producers are so situated that they have a well established trade, they are invited to become members and are made sales agents of the Association and contribute one-half of the cost to the Association for marketing honey on the honey they market individually. The funds realized in this manner will go toward the advertising of honey to increase consumption and toward the purchase of one or more packing, bottling and storage plants.

Producers over the state are generally agreed that they have all to gain and nothing to lose by cooperation, and prospects for the Lone Star Honey Producers' Association seem indeed bright. Through assistance of the Farm Board, no doubt other southern states will follow in the lead of Texas in organizing for marketing of honey. Thus it will only be a matter of time until producers over the South will be banded together in a strong regional organization which will do untold good in restoring prosperity to southern beekeeping and in finding a ready outlet for southern honey, which in many instances has a delicacy of flavor not comparable to honey of any other part of the world.

The writer would be glad to have those interested in organization work in other southern states to write and get information as to how the work might best be undertaken to merit assistance from the Farm Board. All honey will be marketed cooperatively eventually—for greater prosperity to the producer, why not now?

H. E. Coffey, Field Agent,
Federal Farm Board.

Boiling Escapes in Lye Water?

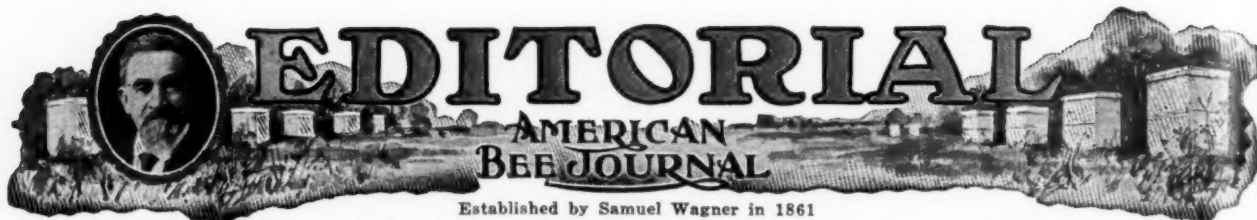
I notice Insinger (American Bee Journal, January, page 31, "A Propolis Remover") advises boiling escapes in lye water. Why lye water? The tin coating doesn't last any too long with the best of care. Why not use salsoda in the water? After pouring off the first water, place them in clean water and throw in a small amount of any kind of lubricating oil and let it float while lifting the escapes out up through the oil, leaving a thin film of oil on the tin to prevent rust.

J. H. Sturdevant, Nebraska.

Any Red Clover in 1930?

I see someone asks in the September or October number about basswood honey. I didn't have any basswood honey last year, but I want to know if there was anyone who harvested a fair crop of red clover honey in 1930? I did; got as much as two supers of chunk honey to the hive on part of my bees. It was the first I ever got and I thought it was all red clover, or practically so. I think it is hard to beat for flavor and quality.

James I. Estes, Missouri.



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Readjustment

During this period of low prices there will be a weeding out of unprofitable business lines. It is reported that large areas of unprofitable peach orchards in California are being grubbed out. The poor quality fruit and the light yielding varieties that offer some return when prices are high make a poor showing now.

Cows that give a light yield of milk which is low in butterfat eat more than they return to the dairyman, and many of them will go to the butcher's block. Because eggs are selling for less in the city markets than for many years at this time of year, many farm flocks are being reduced.

Likewise the apiary which is no longer a source of profit to its owner may be expected to disappear. This weeding out is a healthy process and will result in more efficient production in all lines. One result will be the removal of unprofitable surplus from the markets.

What's Ahead?

As this is written there is much uncertainty in the minds of many as to the future of the honey producing industry. Honey is selling at low prices and demand is slow. To properly get our bearings it is necessary to compare our business with others of similar nature.

Milk and butter prices are low, probably even lower in proportion than honey and with more serious competitive conditions to face, so we would hardly abandon honey production for dairying. Eggs are selling at lower prices than for many years past, which is also true of many other farm products. Our lot is the common lot of the food producer, but we have a decided advantage in that extracted honey and beeswax are not perishable and can be held for an indefinite period in the hope of better markets.

There is every indication that the beekeeper will fare as well as the producer of other agricultural products, with some decided advantages in his favor. It is a poor time to abandon a business which we understand for the uncertain chance of better success with something else. The American Bee Journal is of the opinion that now is an especially favorable time to pick up bargains in bees and equipment and get ready for the prosperity which we feel sure will come again.

Trade Barriers

The present unfortunate condition in the business field is world wide in scope. There seems to be no lack of goods, but rather is there a surplus of everything. The farmers of America have too much wheat and too much cotton and corn; the Brazilians have too much coffee, Argentine has too many cattle, while Cuba has too much sugar and the tropical countries have too much rubber. Most of our manufacturers have large stores of unsold goods. Our ability to exchange the goods we have for the things we need for the present has broken down.

The most apparent reason for this failure of our economic system of distribution is the artificial barriers to trade which have been erected. America has loaned large sums of money in foreign countries and interest payments alone amount to about \$500,000,000.00 annually. Since it is impossible for people of other countries to find that amount of gold, they must pay in commodities. The recent tariff law, which boosted tariff on all imports to unheard of levels, makes it impossible for our debtors to make their payments without great hardship. Never before has this country aroused such worldwide resentment as by the recent tariff law. As a result we are losing our best foreign customers. They rightly decide that "What is sauce for the goose is sauce for the gander." One after another of our former customer countries have adopted retaliatory tariffs, with the result that our sales in foreign countries are falling off. When we can no longer sell our goods abroad our factories must close, men are thrown out of employment and suffering results. Some economists contend that there can be little improvement until these unjust barriers are removed. There is every reason to believe that we must be content with a smaller volume of business and a less measure of prosperity for many years to come as a result of American greed which tried to shut off commerce with the rest of the world.

Retail Selling

A recent press release from the United States Department of Agriculture states that many beekeepers who formerly sold their honey to a retail trade discontinued that practice during the period of high prices brought about by the world war. Many turned to the wholesale market and put up their honey in sixty-pound cans. As a result of this practice much of the former market was lost. Since the wholesale market no longer takes all the honey readily, many beekeepers are again developing a retail trade.

There are many opportunities in this direction. Milkmen who cover a regular route daily can carry honey also without extra expense and make a profit both for themselves and for the beekeeper whose product they handle. Roadside stands offer an especially favorable place to sell honey. Where retail sales are being pushed by house-to-house canvassing there is little complaint of failure to move the crop at a fair price.

There are many localities where consumers purchase honey only direct from the beekeeper, and in such places little competition is felt by low priced honey from the West.

International Good Will

The meeting of the American Honey Institute and the Honey Producers' League with the Ontario Beekeepers' Association at Toronto has brought the leaders of the industry in the two countries together. It would seem that the United States and Canada must have common problems in nearly every line of endeavor. We talk the same language, we follow the same general customs and use the same kind of equipment. Anything that injures those on one side of the line must work equal disadvantage to the other. Canada has been our best customer for manufactured products and we in turn have purchased enormous supplies from Canada.

Such a gathering as that in Toronto serves to acquaint each with the other's problems and to smooth out such difficulties as are apparent. If such meetings were of

more common occurrence there would be less friction between countries and increased prosperity would result.

The American Honey Institute is international in its service and its influence. Every possible opportunity is utilized to increase the use of honey in both countries.

Wax in Industry

Beekeepers have little idea of the great increase in the use of waxes in various manufacturing processes in recent years. Numerous inventions have created new markets and new uses for wax. Beeswax was not available in sufficient quantity to meet these needs and the demand has led to the development of new waxes from other sources.

So great has this demand become that mineral wax is now produced in far greater quantity than beeswax. Official figures give the imports of mineral waxes as more than fifty million pounds last year, or more than ten times the total imports of beeswax. The vegetable wax imported from Brazil alone was nearly equal to the total imports of beeswax.

The prices of these competing waxes are usually below that of beeswax. The mineral waxes are very much below, often less than half the price of beeswax.

The total production of beeswax in American apiaries is but a drop in the bucket of total wax needs of American industry. With only about three million pounds of beeswax produced here, against a total importation of all waxes of more than sixty million pounds, we should have a care to avoid unnecessary displacement of beeswax in industrial channels.

We have no figures as to the total production of mineral wax in this country. Since mineral wax is a by-product of petroleum manufacture, it is probable that the home production far exceeds imports. With this in mind we learn that the production of beeswax in this country is a mere incident in the total market demand and that any change in prices will depend more upon the competition with other waxes than upon imported beeswax.

New Competition for Butter as Well as Beeswax

The dairy industry is very much disturbed about the competition which has recently developed from palm oil as a source of artificial butter. Margarine or butter substitutes are subject to a tax of 10 cents per pound. In spite of that tax the product still sells below the price of butter. As the law is drawn the tax is applied to substitutes artificially colored. Margarine manufacturers have found that they can make a product from palm oil which is naturally yellow in color and so does not come under the special provisions of the law. Avoiding the tax enables them to sell at such a low price that butter prices have already suffered seriously as a result.

Carnauba wax is a product of the palm tree gathered in Brazil, and this has recently come into general use for numerous industrial purposes, replacing beeswax for some uses. Although it is impossible to determine to what extent this competition depresses the price of beeswax, it certainly has some effect. Now palm oil is offering serious competition for butter and offering a serious problem for the dairy industry.

New products are constantly appearing to disturb the markets for staple lines and there is no longer any security for any product simply because its use has been general for a long time.

No Conflict

Within a few hours of each other two letters came to this office criticizing the American Bee Journal from opposite viewpoints. One complained that we have no consideration for the commercial honey producer. The other complained that our support is all for the big producer as against the small beekeeper.

It is ridiculous to think that there should be conflict between honey producers because of the size of their operations. Both are essential to the success of the industry. The small beekeeper, because of his enthusiasm, arouses public interest in a way that the big producer has no time to do. The big producer, on the other hand, sends honey to markets in such volume as to supply needs entirely beyond the reach of the small beekeeper.

It is only because there is no stable market for honey and each man makes his own price that there is apparent conflict. When markets are established with daily quotations as is now the case with eggs, butter and other commodities, the price will be uniform whether a man has a case of honey to sell or a carload.

There is no conflict between the eggs of Iowa and Michigan in the markets. The agencies take the eggs as they come in and distribute them as trade demands. In our anxiety to overcome the competition of honey from other sections we are destroying the market for all honey. Cooperation is far better for all than competition.

Another Honey Market

We are constantly hearing of new outlets for honey of which we had not known before. Now we hear that one of the largest consumers of honey is the manufacturer of a well known brand of cigarettes, who has bought several carloads of honey during the past year. Perhaps the presence of honey may account for the fact that some cigarettes cause less throat irritation than others.

With sufficient funds for research, it would probably be possible to find enough new uses for honey to take far more than we can now furnish. Our product has peculiar qualities not easily duplicated.

The Honor Roll

On another page in this issue will be found a list of subscribers to the American Honey Institute from April 1, 1930, to February 10, 1931. A list of the contributors for 1928 and 1929 will be reported in an early issue.

As subscriptions have been coming in very rapidly during the past few weeks, the list is as complete as it was possible to make it up to the time of the meeting of the American Honey Institute at Toronto. Those subscribers who sent in their funds or pledges since that date will be included in the next annual report, to be made either in the columns of the bee journals or in a special report published by the Institute.

Never before, in our opinion, have beekeepers contributed to such an important project, nor have they ever received more for their money in an advertising way than they are now receiving at the hands of the Institute under the able direction of Dr. Barnard and Miss Fischer.

A complete report of receipts and expenditures will be published. Contributors have a right and should know just how their money is expended.

The suggestion that beekeepers contribute at the rate of \$1.00 per ton of honey produced each year or one-half of one per cent of the crop is so reasonable that all should be able and willing to help.

For 1931, it is hoped that thousands of beekeepers all over the United States will contribute to the support of the Institute. At a time like this, when honey is slow to move, need for funds to popularize honey is great. Let everyone do his bit.

The Clouds Are Lifting

We find many signs of business improvement in our daily mail. There are numerous reports of men who have been idle returning to work and of factories reopening. There are reports of rains in regions which have long suffered from drouth. Many beekeepers write that honey is moving and that they have sold their crop. It will take some time yet before business is back to normal, but it is encouraging to feel that improvement is at hand.

That "New" Idea—the Top Entrance Hive

By H. A. Insinger

THE top entrance is a provision of nature. Natural cavities in trees caused by decay or by bird injury in many cases provide a top entrance. To this add the fact that bees build comb downward and the common observation that when there is an entrance anywhere above the bottom the bees use it with remarkable regularity.

A friend of mine with about two hundred colonies has tried a modification of the Rauchfuss method of wintering, boring an inch hole into the upper hive body. Later some of these bodies were used for supers, and he assures me that this one-inch hole was used as much if not more than the opening at the bottom.

Then there is a record of a swarm establishing itself in an open-top chimney which had been plugged below. The bees were exposed to the weather in a draftless cavity, where they prospered for three years before an enterprising beekeeper took them for his own. The top entrance hive has a basis in fact, therefore, and is being tried out extensively both in the North and in the South.

The Top Entrance Easily Provided

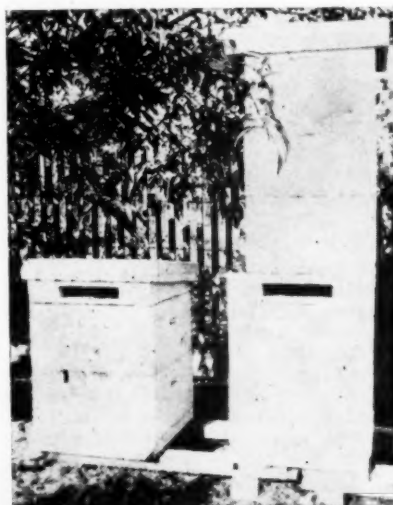
The standard hive can be equipped with a top entrance by providing a vestibule. Personally, I like the large hive with the top entrance better than the eight- or ten-frame size, my experience indicating that a small brood chamber becomes overcrowded too quickly, requiring much handling as well as extra equipment. The result is a high-stacked colony during a heavy honeyflow.

The pictures show how the top entrance hive is assembled, with the bottom board reversed so the brood

We are always slow to accept new ways of doing things. The top entrance hive is such a radical departure from the entrance in common use that we may not fully appreciate its possibilities. Further reports will be awaited with interest.

chamber rests on the shallow side, with an extra strip nailed across the entrance to close it up. If there is too much room below the frames, the bees may fill it with burr-comb.

Everything should be draft proof, especially during winter and spring. There should be no open cracks below the top entrance, or they will defeat its purpose. Openings can be closed up with putty made of whiting and a mineral oil. I believe it is better than glazier's putty. If not disturbed too late in the season, the bees may propolize the cracks so they will winter in good shape.



Vestibule, (at right), used as escape board. The three ten frame bodies have twenty-five combs from various colonies. Bees just shaken off but still plenty left. No robbing or fighting. The smaller hive shows how the cover is used with full entrance.

Construction of the Vestibule

This should be built of heavy enough material to provide insulation against outside cold and prevent interior condensation.

I build them this way: Rip a two-by-four in two strips, each two by two. Saw it into lengths just right to fit on top of the hive body. At one end allow space for the entrance, eight inches wide. On top of this two-by-two frame lay a covering of inch lumber and on top of that four 3/8-inch strips along the edges, to provide a bee space above, fitting the

vestibule for a bee escape board. An opening is made for the bee escape in the usual way.

On the lower side I use an inch piece of lumber about three inches wide under the entrance, to make that part more solid. Lighter stuff or narrower has a tendency to warp.

Besides this piece at the front, I use inch strips of the same thickness all around the under side, flush with the outside. On the still exposed part of the two-by-two's half-inch boards are nailed to make the floor, which does not need to be as the picture shows. I usually take scrap lumber that happens to fit. One must use his judgment as far as the beeways are concerned. I believe that the rear should have more beeway than the front. It is advisable to have a hole in each corner of the floor in order to facilitate ventilation.

It will be noticed that, with this countersunk floor, the bees are given additional space above the frames. If the bee escape opening is made toward the rear, above one of the wider beeways, then it can readily be used as a peep-hole during winter or at other times to investigate the colony, or for use in feeding.

The vestibule entrance in all the pictures but one is approximately one and a half inches by eight. This is not any too large during summer, but is big in winter. I propose to plug them up with wads of newspaper until there will be two square inches left open, besides the cover overlapping the entrance. This will prevent an excessive amount of sunlight, rain or snow from getting into the vestibule.

In one picture the covers can be seen sloping back and resting on top of the vestibule. A quick way of



Hive at left has top entrance. The vestibule is a bit too small and still they hang out much less than the ten framer at the right. (I forgot to take off the two empty top supers on the latter.)



Entrance plugged with paper to reduce size. Note how cover fits over entrance when lowered. (This cover was in the process of being made wider, so I took the picture.)



How the bee escape hole is placed above a wide bee space in the floor of the vestibule.

reducing the entrance 50 per cent is to slip the cover down over the front.

The cover is a regular metal affair, only a sheet of celotex is nailed on the inside, and, over that, a piece of old linoleum to keep the celotex from sticking to propolis. My idea is to afford sufficient insulation from above.

What Are the Advantages of This Kind of Hive?

I hold that proper ventilation is the biggest advantage. To my notion, excessive moisture in the hive in winter is the chief cause of loss, and the top entrance eliminates it, as the warm moisture-laden air will rise and pass out. It rises in other hives, too, but if there is no provision to eliminate it, it will condense and make trouble. I believe the top entrance is ideal for wintering.

I also believe that an adequate supply of oxygen means more heat and better heat control, resulting in a better humidity control. With these two factors in hand, I think the bees will maintain a larger brood nest later in the fall and expand the brood nest earlier in the spring. Up to now (the middle of October) my observation is that my top entrance hives have more brood than bottom entrance hives of the same size.

This last spring I had a colony in a hive of regular depth, but Modified Dadant width, with five combs covered by bees. Talk about wet inside! the walls and honey board were dripping, and the bees crawling around half-heartedly, like wet cats slinking through the rain. The colony was in bad shape and behind all the others.

It was the first one I equipped with the top entrance, and what I saw four days later was a revelation to me. Everything was spick and span and the bees were hustling around on nine combs. It's the hive pictured where the bees are seen clustered

about the small entrance. This colony made me the most honey this season, and 80 per cent of it after it began to rain in August.

The picture was taken toward the end of July, at seven in the afternoon, with the thermometer at 80 and the feel of a hundred. The three Modified Dadant width bodies give you an idea of about how many bees there were in it at that time. The hive by its side was a regular ten-frame outfit and not such a powerful colony either. So the picture tells its own story as far as top entrance ventilation is concerned. If I had not made the entrance too small (one and a half by three inches), I believe there would have been very little hanging out. That particular equipment was a vestibule and cover combined, another mistake against which I wish to warn. Subsequently a change was made, the entrance enlarged and a separate cover provided.

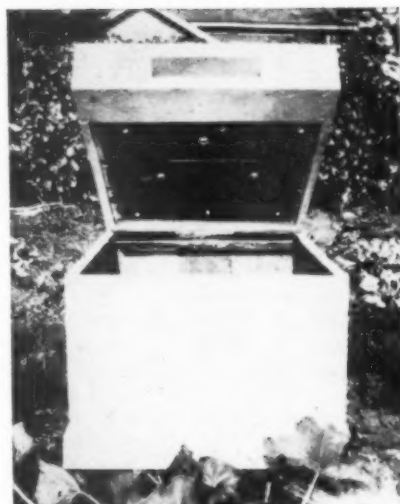
So evidently the top entrance affords an ideal means of heat control and ventilation in summer as well as winter. And if the top entrance will do for the wintering colony what I think it will do, then the expense bugaboo certainly would be an investment. I believe it would pay to equip the apiary with top entrance vestibules and closed bottoms just for wintering.

If you have read Archie I. Thomas' tale about packing, in the American Bee Journal, page 483, October, 1930, then you will agree that the deep body seems to have the advantage. I think, because of the longer cluster, it gives the bees more chance for activity than if all were clustered at the top. The vestibule plan offers you all kinds of long clusters, depending on the number of hive bodies you want to stick under the brood chamber.

In that same number you have V. E. Dehart's story favoring packing. Read it again and maybe you will agree with me that, if you get down to "brass tacks," ventilation is the crux of the matter. By packing them, the bees are being fooled; but give them proper ventilation, or facilities for it, with a top entrance, and they will take care of things themselves.

In my experience, as quickly as colonies are equipped with "toppers" there is a decided improvement all around, not only because of better ventilation and heat control, but, I believe, because the bees work down rather than up. You may have a broad grin now, but just the same it saves the bees time.

Wherever two bodies were in use it came to my notice that the "Old Lady" was laying freely in either body. Eggs and brood in different stages were found in both. In my experience, when a double brood chamber is used with a bottom en-



Arrangement of the bee ways in the bottom of the vestibule floor. There are eight holes and three slots. (They do not show very well but they are there.)

trance it is very seldom that I find the queen going into the lower hive of her own volition. Usually it is necessary to reverse.

So the top entrance will save a lot of work right here and in a measure will help in swarm control. Whether it will do that, I suppose, is a matter for debate. However, in an apiary of eleven colonies with toppers I have not had a single swarm this season. Although the toppers were populous, no preparations were made for swarming that I know of. Of course, this may be due to the season. Next year may tell the story. Isn't it reasonable to suppose, however, that the possibilities of unlimited expansion and better controlled ventilation are factors to be reckoned with?

With the entrance removed from the ground, of course, the problem of keeping down weeds is easily solved, and skunks, toads, mice, and shrews must turn their wits towards more productive territory. The bees have no difficulty whatever in gaining their entrance. They fly right in. Even when the entrance is raised or lowered there does not seem to be any more than a few minutes' confusion. As far as dead bees and waste matter accumulating in the bottom, I find no more than with the old-style bottom boards.

The honeyflow this fall was heavier than I thought, resulting in super shortage. One of my two-bodied toppers was so full of honey and brood that fully a peck of bees were on the outside. During such hot days, with toppers, melted combs should be a thing of the past because of ventilation facilities. The past summer was hot enough. There was such a lack of nectar that there was only an insignificant amount of stores in the hive. The fact that melted-down comb joys were spared me, with bottom board entrance equipment, is no

doubt, directly traceable to the absence of stores.

Top vestibuled colonies seem to have earlier as well as more general flight activity. This trend, and the greater number of bees, resulting from the controlled conditions, logically causes me to expect more surplus. To every fifty pounds gathered by a regular ten-frame outfit I received at least seventy-five pounds from a topper. All my surplus was gathered between the middle of August and the end of September.

Many of our October days were cold and unpleasant. One of them was the twenty-fourth. At 8 o'clock in the morning I went out to observe the behavior of the bees. It was 34 degrees, but the sun shone nicely. The bottom entrance hives were strictly out of business. Even entrance guards were not on hand. The toppers, however, had bees all over the vestibules and there was distinct flight activity. Within the space of a minute there were from two to five bees coming and going. So it was warm enough to fly, but the bees in the bottom entrance hives apparently did not know about it.

A beekeeper with an apiary of toppers need not rush the extracting season, for if he does not get all the honey off in time, he can leave it below the brood nest until he gets ready to take it, even if it be in winter or spring. Whether the removal at such a time would be advisable is another question. It seems to me that this possibility is advantageous. As to the use of an excluder, one will have very little occasion to employ one in the handling of toppers. The reasons are obvious.

Winter stores become more accessible because the stores extend downward. I refer you once more to the article by Archie I Thomas. Since the bottom of the hive is closed, the bees are better able to radiate heat down, because they do not have to overcome the handicap of the incoming cold air at the bottom.

Here is another point: You read discussions of how to get the "be-honeyed" extracting combs cleaned up. I have tried nearly every plan and experimented with two or three of my own. I am inclined to believe that the topper will solve the problem nicely. After extracting the crop, I returned wet combs to the colonies, two supers to a stand, in some instances, making the colonies three stories high, with the brood on top. The cleaning-up program worked but whether this offers a way to store combs and still have satisfactory wintering remains to be seen. I shall winter some on three hive bodies, the two lower ones having extracted combs.

The problem of spring robbing deserves consideration. In an orchard not far from here a two-story colony

happened to be located so the morning sun would not strike it in early spring and it was well into the forenoon before the bees came out. A quarter mile away was another stand out in the open, and those bees, prompted by the inviting warmth, were on the job bright and early.

In due time this colony completed a first-class robbing job on the first one. The farmer learned of his loss when he failed to see bees coming from the hive. Had this colony been in a topper, it would not have happened. In the bottom entrance hive the bees accommodated themselves in the top body during the nights, leaving the stores in the lower one unprotected. A colony in a topper would be ready to repel robbers.

It is a common practice to block up stands during hot weather, increasing the bottom facilities for ventilation. A Florida beekeeper, who uses toppers with a shallower vestibule than mine, drafted a bee escape board to help in ventilation. The opening in the board was covered with a fly screen and put on a regular $\frac{3}{8}$ -inch bottom board with the hives on top. The hive entrance, of course, was through the top vestibule. This is a good plan.

In hunting for queen-cells, remember, with the toppers, the brood chamber will be the "first up to bat," and I don't think there will be as many queen-cells either.

Whether to put empty supers below full ones with this system or to place them between the brood and full supers, I can't say. If this arrangement works: top entrance, brood chamber, empty super, full super, always placing added room just under the brood chamber, then it will certainly save a lot of work. If the empties must always be at the bottom, we arrive at a disadvantage for besides the brood chamber all full supers will have to be handled every time. Then, of course, the question is, does this outweigh the advantages?

Do not make the mistake of having a combination vestibule and cover. I must say this to remind you again, and don't condemn the top entrance; try it. Don't go after them in a wholesale fashion on the strength of this article. Use your judgment, try a few, and then use your judgment again. And here's to you, my wish, **SUCCESS.** Missouri.

He Likes the Carniolans

I have been extremely interested in the essays on the "Best Race of Bees." My experience would make a poor showing beside that of the authors of those essays, but I think the Carniolans have a decided advantage over the Italians. The Carniolans produced more honey, made better combs, and I think handled better. Sid. Bodine, New Jersey.

"Tit for Tat" Criticism

By Jes Dalton

UNDER this heading, in the November number, page 538, there is an article that every beekeeper in America should read and study. My honey selling experience covers a few years in Dakota and a few in Oregon, where I sold all from the door of the extracting house. In Louisiana for two winters I have been studying the roadside market, and this past summer made a long trip through ten states. From my experience, I agree with the writer of this article, particularly when he says: "You use a glass jar of such a shape as to make it as difficult as possible to get the honey out when it is liquid and nearly impossible when it is granulated."

In this same November number, page 523, I mention visiting the packing plants of some of the largest producers on the lower Atlantic Coast, and they are all using an entirely different kind of bottle and package than the ones commonly found on the market or advertised. It is absolutely above the criticisms which Mr. Manley gives. It is a square bottle, taking up less room, and it is easier packed, with a mouth large enough to remove honey in any way you want, and to take a pack of comb honey to make it more attractive to the eye.

I did not hear a single complaint of poor markets or low prices or slack demand on the whole trip. The beekeepers were talking "sales" by cases, truckloads, and carloads.

The bottle I have been using is the one usually advertised in the bee papers and furnished by the supply houses, but it adds immensely to the cost of the pack, is subject to the identical criticisms Mr. Manley complains of, and it is impossible to place honey in it to show to advantage. Once emptied it is of little value. Some day we ought to have those square southeastern bottles on the market.

Mr. Manley's criticism is also sound in emphasizing the white color in the present grading system and ignoring flavor entirely. The influence of those who produce "five hundred carloads cheaply" is seen here as a discouragement to small producers.

Artificial Pollen for Bees

I have read different articles in different papers about artificial pollen for bees in early spring before natural pollen comes; they recommended different kinds of flour and different ways of feeding it. So I will tell my experience with cottonseed meal. To start with, I will tell why I came to try it. We used cottonseed meal for feed in winter and would hang the feed pail outside of a building in the sun, and some meal would be left in it. One day in late Janu-

any I noticed the bees working after the meal. They seemed to like it better than flowers. So I fixed a small, shallow box and hung it outside of the building in the sun and kept dry meal in it on warm days till pollen was found in the field.

The bees would swarm around it as if it were honey or something sweet. They carried in lots of that meal; some colonies carried more than others.

I had never heard of the use of cottonseed meal as pollen and did not know what it would do for the bees, but as I did not have so many colonies I thought I would try it out

anyway. So I watched closely the colonies that carried the most and kept tab on them the whole year, and they built up faster, with no dead brood or old bees to be found. I had a colony in a box-hive that carried the meal heavy and it built up to swarming strength and swarmed on April 6, which was Good Friday, about one month before normal swarming should begin. It was a large, normal swarm and did well.

So I have used cottonseed meal since when they wanted it, and have not seen any harmful results of it, and I expect to use it again.

George H. Williams, N. C.

Shall It Be Express or Parcel Post?

By Lee Stewart

I HAVE often wondered why shippers and purchasers of package bees did not avail themselves of parcel post service, and as another season is at hand I thought a little information along this line might not be amiss. It is not my desire to boost one system and criticise the other, but to discuss the two methods—express and parcel post—strictly on their merits.

The two important items in the transportation of package bees are cost and the time consumed en route, and if either is more important than the other, it certainly is the latter. I am nearly 1200 express miles north of Houma, Louisiana, and considerably nearer on a parcel post basis, since postage rates are figured "as the crow flies." The postage on a five-pound package (the approximate weight of a two-pound package ready for shipment) is 33 cents, and the express rate on the same package is 80 cents. The postage on a fifty-pound package is \$3.03 and the express \$3.26. The heavier the weight and the longer the haul, the express rates will approximate the postage rates, due to the fact that the two systems are computed on just the reverse basis, the express rate being proportionately higher on a light weight and a short haul than on a heavier weight and a long haul, which is just the reverse in postal calculations. But the important thing in this particular case would be the saving of from twenty-four to forty-eight hours in favor of the mail service—and every beekeeper fully appreciates what even twenty-four hours means to the success of a package of bees.

Undoubtedly bees receive reasonably good care by the express companies, and they most certainly do by the Postal Department. They are carefully loaded to avoid drafts and excessive heat; nothing is ever piled upon the cages and often they will ride over four hundred miles without ever being moved. Much time is

saved at the gateways. In Chicago, which is the largest, a package of bees will clear in less than forty minutes—i. e., in less than forty minutes after they reach Chicago they are again ready to resume their journey, whereas it takes practically all of a day for an express shipment to clear Chicago. They are given the same care and dispatch as first class mail, which is always the quickest way regardless of distance.

In shipping by mail, I would group my packages in twos or fours, as this will eliminate part of your first pounds, which are always the most expensive, and it will also reduce your special handling charges if you avail yourself of this service. In either case your total cost will be less. Your local postmaster and express agent will give you your local rates and you can figure for yourself just how much it will cost you. Of course, the postage will have to be paid at point of shipment, and if you don't know what this will be, or do not care to send to the shipper enough to cover it, he can mail your bees c. o. d for enough to cover postage. They can also be insured if you care to do so. But in any case don't overlook the time element, which is very much in favor of the mail service. This is an important factor in a thing as perishable and short lived as bees.

Hard Luck

Last June, the very day after I had completed the purchase of a full line of equipment to look after fifteen colonies of bees, I was invaded by inspectors. I had presumed that bee inspectors must necessarily exist to help beekeepers, but when I saw hives "choked-a-block" with beautiful new comb and brood and bees and honey reluctantly burning amongst my own gasoline and firewood, I had to think the matter over, and why such a visitation should come to one

never told what to be on guard against nor what to look for.

How do I know that the few unsuspected cells of foulbrood for which my hives were condemned were not the legacy of "some filthy old cotton gloves" (again quoting your current article on the subject) of the examiner who looked over the few hives I had in 1929? And how do I know that the next visit may not be a real inspector's gala day, with all my equipment going up in smoke? Two years ago a neighbor only a mile away was also burned out of business.

Consider me as a fact in the controversy—that whereas I was a bee enthusiast, the "burning question" has made bees, bee literature and everything beginning with a "b" an anathema to me.

Burning will put small men out of business and entrench the big men, and I take it that is its purpose. But big men have brought honey out of the luxury class to the point where it hardly pays to produce it.

Permit me to suggest to a bee journal that its aim should be a nation sprinkled with bee enthusiasts—lovers of bees (and they are easy to love); and its concern not the affairs of big bee men, but the spread of beekeeping among the people as the most delightful of hobbies.

W. D. T., Canada.

A Little Sermon from Packing and Marketing Report

P & M (Packing and Marketing, the Almond Growers' Association) has issued an interesting report stating its purposes and policies and making very clear that it is in the business to stay. Commenting on the report, Cary W. Hartman, secretary of the California State Beekeepers' Association, says: "We should study it carefully. We are in no position to form a cooperative of our own." The report goes on to say: "There is nothing more hopeless than unwilling cooperation. Indeed, the very phrase is a contradiction in terms. If the honey producers of California are forced into a cooperative organization, it will be doomed to failure from the start. On the other hand, if they have suffered enough from prices which will not return cost of production; if they realize that their individual efforts no longer are sufficient to make it possible for a profitable return on their honey, then they are prepared for the only remedy which will ever bring them any relief—that is organized effort."

This is a sermon in itself.—From "Betimes," California State Beekeepers' Association.

Water for the Bees



The picture shows the fountain erected by Lee Horning, of Morrison, Illinois, for watering his bees. The pool is made of concrete, with coarse wire screen so placed as to provide safety for the bees which fall into

the water. They can readily cling to the screen and walk out even though the water is quite cold. The water supply is furnished by a revolving fountain above the pool which is quite ornamental.

Blame the Real Criminal

By J. H. Merrill

IT seems to be a trait of human nature to give credence to those things which we want to believe, even though the facts are to the contrary. This is certainly the case with those investigators who are trying to link the honeybee with fire blight.

After it became known that insects spread plant diseases it was not unpardonable to assume that, inasmuch as bees were the most numerous insects in orchards at the blooming period, they were responsible for the appearance of fire blight in the orchard shortly after the blooming period.

Investigators have shown, first, that fire blight passes the winter in the canker stage on the twigs, and, secondly, that it is introduced into the blossom by sucking insects, such as plant lice, which crawl through these cankers and then begin sucking on the unopened fruit buds. Bees pass from flower to flower, and, even if they do spread fire blight organisms, they are only carrying with them disease germs which another insect has introduced into the flower.

It has been experimentally shown that when plant lice were controlled in an orchard fire blight also was controlled, even though the bees were active in the orchard at that time. On a check plot which was untreated for aphids, fire blight made its appearance on every tree, while on those treated trees immediately ad-

jacent to this plot no fire blight could be found.

In the editorial on page 56 of the American Bee Journal, the work of two investigators is commented on. They both found fireblight organisms in a beehive. What if they did? If a boy walks through a mud puddle and then tracks all through the house, does that mean that the boy was responsible for the puddle being in the street? To use an extreme analogy, supposing that someone had placed a considerable amount of arsenic in a sugar bowl. Later, the mother of four children used this sugar to sweeten food and all died as a result of eating it. Would the verdict be that the mother had murdered the four children and then committed suicide? Of course not. We would blame the original criminal. Then why not do the same with fireblight?

It seems to me that it would be rather difficult to prove absolutely that fireblight is introduced by bees, even though it may appear in orchards after introducing bees from an infected orchard. It would first have to be proved absolutely that there were no sucking insects present before the experiment began. Furthermore, the bees which work over the honey in a hive are not field bees, and of course could not spread fireblight. Those field bees which do spread fireblight must have obtained their original infection from blighted

blossoms rather than from a hive. In other words, the bee is a spreader and not an introducer of fireblight. The mere finding of fireblight bacteria on a bee's body or in a beehive doesn't prove that the bee is the real criminal any more than in the case of the mud puddle or the arsenic. They are only what might be called incidental carriers, and the sad part of it is that they become so while performing a friendly work for the fruit grower.

Until it can be shown experimentally that it is possible for bees to become contaminated with fireblight bacteria from an original source other than the blossoms, it would seem that we had better concern ourselves with the original criminal.

Some German Bee Literature for 1930

Volumes 7 and 8 of "Erlanger Jahrbuch fur Bienenkunde" have been received at the library of the American Bee Journal. These volumes are edited by Dr. Enoch Zander, assisted by original writing from a number of collaborators, and on various scientific subjects. The volumes are published by the press of Paul Parey, in Berlin.

Other books received are a 48-page booklet by Dr. Albert Roch on German honeys, "Von den Immen" (100 pages), by K. Pinkpank, and "Bienenwirtschaftliche Notprogramm," of 80 pages, by K. H. Kickhoffer.

The Worst in 44 Years

This was the poorest honey year in the forty-four years I have kept bees. Just when the bees began to work in the sections, the dry weather began, and continued until the grass began to die in the fields. I and a few others about here fed our bees and expect to get them through winter. We think over half of the colonies will starve before spring.

I got twenty-three finished sections from twenty-one hives, and these were dark. It may result in good, for possibly it will put a number of beekeepers out of business who never produce much honey.

Orpheus Diller, Pa.

A Wild Flower Book

A handy little volume, just the right size to carry in your pocket when you go to the woods, is "Some Familiar Wild Flowers," by James Edmund Jones. There is a photograph of each of the flowers, described with a short paragraph, designed to assist the reader to identify it at sight. Most of the common wild flowers of the eastern U.S. and Canada are shown. It is a Macmillan publication and sells for \$1.50 and may be secured from the American Bee Journal if desired.

I Take Issue With Mr. Killion

By John E. Dumon

I wish to take issue with Carl E. Killion on his article in the February number page 61, on the cellophane wrapper for comb honey. Mr. Killion says: "I am led to believe the wrapper is too much of a ready aid to help the backlotter and farmer beekeeper doll up his comb honey for market."

I believe if Mr. Killion is the beekeeper his article seems to imply he can keep pace with his "enemies." He forgets who uses his product. The merchant and the housewife are keen. They know when a thing is right, and the funny part of it is if they do not get an article that is right they won't come back for more. Once will be enough and from then on Mr. Killion will have the inside track.

Of course, the cellophane wrapper helps the farmer and backlotter doll up his honey and it will just as surely help Mr. Killion doll up his. Mr. Killion's honey, strictly graded, quality comb honey, will kill off the backlot and farmer competition unless the backlotter and farmers raise honey as good as his.

Dishonesty will be found among backlotter and farmers as well as anywhere else. It is just as much of a trial to the small producer as to the large one, and probably more so, to find an inferior article on the market as a "strictly graded quality article." Let's stick to our guns and produce good stuff and build up to our customers to the detriment of the dishonest producer and vendor. Merchants and housewives are their allies and their final judges.

In the days of dairy butter much discrimination was shown in the purchasing of butter by housewives. Good butter and bad butter was on the market and good butter sold at a good price. Food products are still the subject of discriminating housewives. A certain brand of food is known to be good, and they buy it. It is recognized by the stamp or label.

If Killion's products are to be depended upon as regular in quality and the quality is good, then Killion's label or stamp will mean something to Killion and all of the backlotter and farmer beekeepers in the country will not hurt Killion's sales one iota. The housewife will call for Killion's product, get Killion's product and Killion will begin to think that the backlotter and farmer is not such a villain after all.

No, it is not the backlotter and farmer that Killion has to fear. It is the dishonest honey producer trying to unload his poor quality honey. Quantity of production is no guarantee of honesty.

Simply because Mr. Killion will not market his poor grade of honey behind the cellophane wrapper is no sign that some other large producer

will not do so. Merchants and housewives who are educated to look for the label or stamp of quality can easily apply their knowledge to the selection of honey under a known label or stamp.

The cost of wrapping is immaterial. Better methods of buying, better manipulation, better methods around the apiary and honey house will pay for all the cellophane that anyone would use to wrap the honey and leave a tidy profit besides. Cellophane is so far ahead of the old way of marketing comb honey that Killion better quit his hollering and tighten up his belt and get down to using it. Let him meet his competitors with better methods, better production and quit saying that the big producer is the only good producer. The small producer doesn't like the implication and is tempted to enter a counter charge or two that might start war on the warpath.

Michigan.

Marvin Goes With Hambleton

George E. Marvin, who has been working on beekeeping problems with Prof. H. F. Wilson at the University of Wisconsin, has resigned, effective February 1, to accept a position with the bee culture laboratory in the Bureau of Entomology under James I. Hambleton.

During the past few years our readers know Mr. Marvin best for his work to determine the cause of deterioration of honey in storage, the fermentation of honey and the

growth of yeast. His work with the Federal department will be along similar lines.

Mr. Marvin is a graduate of the Wisconsin College of Agriculture and has been in the employ of the college since 1925.

Michigan Report

H. M. Krebs, chief apiary inspector of Michigan, reports that more than a hundred thousand colonies of bees were inspected by his field force in 1930. The percentage of disease, counting only colonies actually inspected was 6 per cent. It is estimated that the percentage of disease for the entire area under inspection has been reduced to slightly more than 3 per cent.

The total number of beekeepers is estimated at 23,000 for the entire state, with a total number of colonies between 185,000 and 190,000.

Prospects in Utah Good, According to Hillman

The Uintah basin, probably the most important bee area in Utah, will produce about a million and a half pounds of honey in 1931, according to Dan H. Hillman's estimation. There are 15,000 colonies in Duchesne County alone.

Apiaries are quite generally scattered over Utah, a few beekeepers specializing to the extent of five to eight thousand colonies apiece, the total income to the state, according to Mr. Hillman, being about half a million dollars.

G. P.

A Magnificent Exhibit in Alabama



Here is a picture of an exhibit put up by J. M. Cutts, M. C. Berry, W. D. Achord, and the Allenville Apiaries at the Alabama State Fair at Montgomery in October. We would like to call particular attention to the pyramids of honey with light coming

from the inside and to the wonderful display of live bees. Altogether this is one of the prettiest and best arranged exhibits that we have ever seen, and the Alabama folks are to be complimented on their ability to plan it.

Practical Aspects of the Pollination Problem

By L. H. MacDaniels, Cornell University

THE problem of pollen distribution in the orchard is difficult to solve because the factors involved are largely beyond the control of the orchardist. The pollen of the apple and, in fact, of most of our fruit plants is adapted to distribution by insects rather than by the wind. Only under very special conditions would it be possible for the wind to be of any appreciable value in cross-pollination. It is therefore necessary that the pollen be distributed by insects. In the early days of orcharding there was, without much doubt, an abundance of wild insects which were active in pollen transfer in most localities. The changing conditions of agriculture, however, and particularly spraying and dusting practices, have reduced these to a point where in many orchards they are of little value in pollination. The wild insects visiting apple blossoms were studied during the spring of 1929, both in western New York and in the Hudson Valley, and, with the exception of one orchard, were found to be almost wholly lacking. This condition was especially acute in western New York.

If wild insects, including bees, are inadequate for pollen transfer, and there are no beekeepers in the community, it remains then for the grower to provide bees in the orchard to carry the pollen. At the recent meeting of this horticultural society, Mr. W. D. Hootman of the Michigan Agricultural Experiment Station gave an interesting account of the increased yields that had followed the use of bees in Michigan orchards. That such results have been obtained is encouraging, for it shows what great help in securing a set can be expected from bees under some conditions. Unfortunately, however, the flight of bees is dependent upon weather conditions, and, while in good weather they are very effective and produce good results, in poor seasons they may be of little or no value, and fruit growers ought to thoroughly understand this before bringing bees into the orchard. For example, in the spring of 1928, in western New York, there was not a single day during the blooming season of some orchards when bees could have flown to good advantage. Under these circumstances, bringing bees into the orchard and providing bouquets or other sources of pollen in the orchards was futile. In the spring of 1929, however, there was a single day when insects could work and the effect of placing bees and sources of pollen in the orchards was apparent. Under these conditions, in Niagara County, in mixed plantings where McIntosh was in

alternate rows with Hubbardston and other varieties, good crops were set. In solid blocks of McIntosh, however, a good crop was obtained only on the first and second rows next to the pollinizers. In Seneca County, McIntosh were observed to set well adjacent to a block of Wealthy, but the effect of the Wealthy pollen did not extend much beyond the second row.

In Monroe County, near the lake, the set of McIntosh, even on the row next to the pollinizers, was not sufficient for a full crop, and the second row distant showed practically no benefits of cross-pollination. In the same region, however, McIntosh surrounded on all sides with Oldenburg and other varieties set well. In a Rhode Island Greening block, the row next to the pollen varieties averaged 8 bushels per tree, the second row 6.4 bushels, third row 6 bushels, and fourth row distant only 4.4 bushels. This occurred in spite of a supply of bees in the orchard. Other similar cases were observed indicating that in a season of this kind, with only one day of good weather, even the second row from the pollinizers was not satisfactorily cross-pollinated. As a practical conclusion from these observations it is seen that under these conditions McIntosh or other self-sterile sorts should not be planted in blocks of more than two rows wide with pollinizers on each side for best results.

In this season, with only a single day of suitable weather for insect flights, the effect of bouquets placed in the tree was, for the most part, not beyond the side of the trees where the bouquets were located. The yield, however, on the trees with bouquets was considerably increased over that of trees where bouquets were lacking. In one orchard three trees with bouquets averaged eight bushels per tree, whereas the others averaged but 2.2 bushels. In a Northern Spy orchard the effect of bouquets was not observed more than a few feet from the bouquet and the set on the trees was not greatly increased. This was evidently because the bees did not work in the Spy bloom while the bouquets were in good condition. In the season of 1928 the effects of bouquets placed in the trees was apparently not beyond the part of the tree actually touched by the inserted branches in the process of putting them in. Under better weather conditions it would be expected that bouquets would affect a larger area. From these and other results it is evident that the effect of placing a pollen bouquet in a tree may or may not markedly increase the yield on that

tree, depending on the amount of good weather, the number of bees working and the way they work.

It is not the purpose of this paper to discuss the habits of bees, but rather to give a brief account of results obtained in 1929 by the use of bees in orchards to increase the set of fruit. During this season, bees were placed in four different orchards in different relation to pollinizers and the varieties to be pollinated. In the first orchard relatively weak colonies of bees were placed at the rate of about one to the acre. In this block of twenty acres of Rhode Island Greening and McIntosh inter-planted, the trees on the north and next to the lake bloomed later than the McIntosh. At the south end, which was more sheltered, Rhode Island Greening blossoms opened up before the McIntosh petals fell. There were also a few trees of odd varieties scattered about. The result was that in the south end of the orchard there was a good set of fruit, both because the varieties bloomed together and because the bees were able to fly in the more sheltered situation, whereas in the north end the crop was practically a total failure. In a second orchard six colonies of bees were placed in a group between a block of mixed varieties and a McIntosh block. The bees worked well on one day, but pollen was not distributed beyond the first and second rows of the McIntosh block. In a third orchard colonies were placed between a mixed planting of pollen varieties and four rows of Rhode Island Greening. The bees were observed working well on one day. Although some fruit was set entirely across the block, it fell off from eight bushels on the row next to the bees to four bushels on the fourth row distant. In the fourth orchard colonies were placed under Rome trees at some distance from the Northern Spy block to be pollinated. The effect here was practically nothing. On the day that Northern Spy opened and could have been pollinated the bees did not work in the Spys, but rather upon Twenty Ounce and Wealthy in an adjacent block. The reason for this preference on the part of the bees was apparently that the Northern Spy blossoms which had just opened had not secreted any nectar. The set was poor throughout the orchard except on branches which were pollinated by hand.

One thing that was rather clearly shown in this work was that bees working out of a hive do not stop close to the hive. In the case of two Northern Spy trees and one McIntosh tree with colonies of bees directly under the tree the set was no better

immediately above the hive than elsewhere even though pollen bouquets were in adjacent trees. Observation of the bees going in and out of the hive showed that the bees going out went directly to some distant spot and those coming in went directly into the hive. It was also evident that the placing of colonies of bees with relation to the varieties to be pollinated is of less importance than the position of the pollen sources in relation to the trees to be pollinated. The bees apparently worked very locally, possibly visiting only a single tree or moving from one tree to an adjacent tree rather than skipping around the orchard. Such action on the part of the bees has a direct bearing on the most efficacious placing of pollen bouquets and planting or top-working trees for pollinizers. Under these circumstances there would be little value in placing the sources of pollen next to the hives. They should rather be placed at frequent intervals among the trees to be pollinated.

Work at the Michigan station indicates that probably the best position for a bouquet is high up, as, for example, on a six- or eight-foot step-ladder, between the trees to be pollinated. This, of course, is rather difficult to arrange on a large scale, so it is probably more practical to use branches of sufficient size so that even with their bases in water in containers on the ground the blossoms will reach well up in the tree. If smaller bouquets are used, they may be placed in containers suspended from the branches high in the tree. Little value can be expected from bouquets placed near the hive or by placing the hive under the tree which is the source of pollen.

Another point brought out in connection with the work of Mr. A. B. Burrell in the Champlain Valley is that a large block of pollen varieties is of much more value than a few scattered trees. The transfer of pollen from one variety to another is almost entirely a matter of chance, so it is obvious that there is a much greater chance of bees making this transfer if the pollinizers are many than if they are few. In the Champlain Valley, where the weather was particularly good this past season for cross-pollination, there was a good set in practically all McIntosh orchards except in large blocks where pollen sources were few.

A consideration sometimes overlooked in pollination work is that bees do not work on blossoms which contain neither nectar nor pollen. The secretion of nectar depends very largely upon favorable temperature.

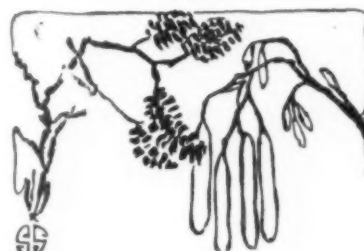
It happened that in one orchard on the only day when bees might have worked on the Spy blossoms they did not do so, because apparently no nectar had been secreted. The bees worked instead on other varieties which had been open longer. The opening of the blossoms may not be accompanied either by the shedding of the pollen or by the secretion of nectar, both of which are necessary before cross-pollination will be effected by bees. The stigmas of the flowers are receptive for pollination as soon as they are exposed. There is also varietal preference on the part of bees based on varietal differences in nectar secretion and the production of odor, so that under some conditions they will work on one variety and let another almost entirely alone. This deserves consideration in providing pollinizers either as bouquets or planted trees. Unfortunately, we know very little about the question at present as far as apple varieties are concerned.

In a region like western New York, in which wild insects are very scarce and in which tame bees are almost wanting because there are no apiaries, the orchardist who brings bees into his plantings may be disappointed in the numbers of bees which work in his orchard. This small number is apparently due to the fact that where the bee population is so small and the fruit acreage so large the bees, under favorable conditions of flight, cover a very large area, with the result that only a few bees work on each tree. This condition, of course, cannot be bettered except by bringing in more bees or by concerted effort on the part of orchardists to increase the bee population throughout the whole area.

In the foregoing paragraphs much has been said of the limitations of bees in pollen distribution. It must be borne in mind, however, that for all that bees are still the most effective pollen carriers there are and that they are the only insects that can be managed by the orchardist. Obviously, however, not all fruit growers have pollination problems, and certainly all do not need to bring in bees. For the fruit grower, therefore, who wishes to manage his orchard business intelligently, it is necessary for him to determine whether or not he has a pollination problem. Wherever lights sets of fruit follow full bloom in orchards otherwise in good condition, a pollination problem is to be suspected. This can be tested by bringing in bouquets of good pollen varieties or by the hand pollination of blossoms. If the set is obviously increased by either of these practices it is probable that the lack of cross-pollination is the cause of the light set. If a check upon the supply of pollen sources shows these to be inadequate, pollinizers should

be provided by top-working or possibly temporarily by bouquets. The abundance of insects in favorable weather or for flight should then be checked up. In some orchards wild insects will undoubtedly be adequate; in others, the neighbors' bees will be found doing good work. Where bees are lacking, however, it will be to the grower's advantage to provide a supply in the orchard. Other than this provision of pollen varieties and colonies of bees in the orchard, the factors affecting the distribution of pollen are beyond the grower's control.—From the Seventy-fifth Annual Report, New York State Horticultural Society.

The Alder



Weeks earlier than the most courageous of bloodroots or hepaticas or Johnny-jump-ups, even before the tough and hustling skunk cabbage, the alder hangs out its festoons of yellow pollen-shedding catkins. Tight little sausage-like bundles mark all alder thickets unmistakably. If you cut a few of these branches and bring them into a warm room, you will have them going strong in a few days, shedding pollen in little showers.

Along with these pollen-bearing, or male, catkins of the spring you will find the husks of the female, or seed-bearing catkins of a spring that is past. The short, round clusters of loose scales, looking much like tiny pine cones, that stand out on neighboring twigs, are last year's fruits, from which the seeds have long since fallen. This year's female catkins will appear on similar twigs, as small, nubby, inconspicuous green things. At the time of their blooming, the males have the whole show; it is only during the ripening time, after the staminate catkins have fallen, that the female flower-clusters come into their own. And by then the concealing leaves are already grown.

Alders are common from New England and Canada west to Michigan and south to Texas. The bark is sometimes used for tanning and as a dye stock and to some extent in medicine. The blossoms are the source of an abundant supply of pollen at a season when it is often much needed by the bees. The white alder has been reported as a source of honey but this probably is a mistake, unless it be honeydew.

"Honey Fluff," a New Honey Center for Candy

By Natt N. Dodge

The Candy House, a candy manufacturing company with a factory in Seattle, announces the signing of a contract whereby it obtains the privileges of manufacturing the Honey Fluff candy bar and distributing this bar in Washington, Oregon, California, Idaho, and Montana. Dr.



Dr. C. R. Maines, with box of "Honey Fluff."

C. R. Maines, who developed the process of manufacturing "Honey Fluff," was in Seattle during January assisting the candy makers in manufacturing the first Honey Fluff bars.

"Honey Fluff" is more than 99 per cent honey. The other ingredients are vegetable compounds which enable the liquid honey to be whipped into the light, fluffy consistency of creamy marshmallow. Once the honey has been "fluffed," it will remain in this condition indefinitely regardless of temperature or moisture conditions. Honey Fluff bars consist of "Honey Fluff" coated with chocolate, each bar being of a net weight of 1 1/4 ounces. One ounce of this is honey. The bars are packed thirty to a box. Dr. Maines, who has been associated with the candy industry since he was ten years old, prophesies that "Honey Fluff" will increase enormously the use of honey in candy making. "Honey gives a flavor to candy that nothing else can equal," said Dr. Maines, who has been experimenting for seven years in his laboratory in Riverside, California, with honey in the manufacture of candy. He plans to continue his experimental work with the hope of developing wider uses for honey in candy making. Dr. Maines is an ardent honey enthusiast, as is his wife, who is a graduate nurse and who has been of great assistance to the doctor in his experimental work.

Dr. Maines is a graduate of the University of Chicago, took work at the University of Illinois and the

College of Agriculture and Chemistry at Paris, France. He was given his degree of Doctor of Philosophy at Ashland College. His father and grandfather were both candy makers, being especially interested in manufacturing candy of chocolate and peanuts in Chicago. Because of its food

and health values, honey is especially desirable as an ingredient of candy, Dr. Maines believes, and he feels that the honey industry has overlooked an important outlet for its product in failing to make exhaustive investigations of the possibilities which lie in the field of honey candies.

Number of Egg Tubules in Queenbee Ovaries

By E. Oertel, Assistant Apiculturist,
Southern States Bee Culture Field Laboratory, U. S. Dep't of Agriculture

CONSIDERABLE emphasis has been placed upon the necessity for the beekeeper to have a large number of bees in the bee colony at the beginning of the honeyflow. One of the important factors in obtaining many bees in the hive is a queenbee capable of laying a maximum number of eggs previous to the honeyflow. Beekeepers strive to obtain such desirable queens largely by the selection and retention of queens that produce large colonies. It may be assumed that the size of the ovary of a queenbee influences the number of eggs that she can produce. The length and width of the ovary depend upon the length and the number, respectively, of the egg tubules which constitute it.

This paper presents the results of a preliminary study of the number of egg tubules in the right and the left ovaries of queenbees, the tubules of seventy-nine ovaries having been counted. The material used was obtained in August, 1929, from a beekeeper in southeastern Louisiana, at the time of requeening. The queens ranged in color from those which had no black upon the abdominal segments to some in which each abdominal segment was largely black. There was, of course, some variation in the size of the abdomens. It will be seen in the following table that the number of egg tubules in an ovary varies, the smallest number being in the class of 76 to 80 and the greatest in that of 171 to 175, there being but one ovary in each of these limiting classes. Twelve ovaries, the greatest number in any one class, fall in the class of 126 to 130. Seven right ovaries were injured during the investigation and could not be used. Although there are seven more left ovaries than there are right, the number of egg tubules in the left ovaries is smaller than that in the right ones. In the material used the right ovaries average 129.44 egg tubules, and the left 121.51 egg tubules.

A study of the figures presented by Alpatov (reprint from the annual report for 1928 of the Maryland State Beekeepers' Association) shows that the queenbee ovaries studied by Koshevnikov and by Becker tend to run higher in the number of egg tubules than those given in this paper. Similarly, the ovaries from

queens furnished by beekeepers in Canada and the United States, and studied by Alpatov, show a larger number of egg tubules. His averages for the number of egg tubules in right and left ovaries are shown in the tabular summary which follows:

Italian queens (U. S. A.):

Left (5 ovaries) ----- 160.0
Right (7 ovaries) ----- 167.0

Black bees (Ontario, Canada):

Left (9 ovaries) ----- 164.2
Right (9 ovaries) ----- 162.2

Considerable experimental work will be necessary to determine whether a queen with a large number of egg tubules will produce more bees under similar conditions than will a queen with a small number of tubules.

The Number of Egg Tubules in the Right and Left Ovaries of Queen Honeybees

Class	Right ovaries		Left ovaries	(79)
	(36)	(43)		
76-80	0	1	1	
81-85	0	0	0	
86-90	0	3	3	
91-95	0	0	0	
96-100	2	3	5	
101-105	2	2	4	
106-110	2	2	4	
111-115	2	4	6	
116-120	4	5	9	
121-125	5	3	8	
126-130	8	4	12	
131-135	2	3	5	
136-140	2	5	7	
141-145	1	3	4	
146-150	2	2	4	
151-155	1	0	1	
156-160	1	2	3	
161-165	0	0	0	
166-170	1	1	2	
171-175	1	0	1	

Cum Laude—Galli Curci

Say, fellows, we ought to praise Galli Curci to the skies for the voice she has given us about the use of honey. I am going to get a copy of the *Adventists Times*, where the original statement by Galli Curci appears, and I must have 5,000 letter slips of those remarks just as quickly as I can get them.

Those are the tidings which keep us fellows going.

J. H. Sturdevant, Nebraska.

U. S. Chemists Deny Diastase Test Measures Purity of Honey

The diastase content of honey varies so widely that it is not a reliable index of the purity of all honeys, chemists of the U. S. Department of Agriculture report. Germany uses a diastase test for detection of adulteration or over-heating of honey. The Federal honey experts concede that Germany is within her rights in establishing such food standards as she chooses, but they, nevertheless, insist that this test may exclude, as adulterated, honeys which are in fact pure and which have not been overheated.

Exporters who plan to enter the German market with honey which they know is pure and unadulterated would do well to have the diastase activity tested before shipping it to Germany, says the department. Department of Agriculture inspectors are on duty at the principal ports of export for honey, and for a small fee can issue certificate as to the diastase content of honey.

Diastase is the name applied to an enzyme or ferment which is capable of digesting starch—that is, of transforming it into simpler products. The diastase in any honey is probably of little importance to our health, say the chemists, because our body secretions under ordinary circumstances produce enough enzymes for all normal needs.

Although at present adulterated honey is practically unknown in the markets of the United States, the Bureau of Chemistry and Soils undertook an investigation as the result of the refusal of German importers to accept several lots of honey from the United States, claiming that according to the Gothe test, in use in Germany, the honey in these lots was low in diastase, presumably because it had been heated excessively. The German law uses the diastase content as an index of the purity of honey, and prohibits labeling honey as pure which has a diastase content below 8.3 units on the Gothe scale. Even when diastase in pure honey has been impaired by overheating, the German law nevertheless classes the honey as being adulterated.

In the experiments of the Federal Department of Agriculture, recently completed, about three hundred samples of honey, obtained from all the important producing areas of the United States and representing a great variety of floral sources, were analyzed by the Bureau of Chemistry and Soils. The experiment disclosed a marked variation in the diastase content of natural unheated honeys. The content as measured by the Gothe scale ranged all the way from 1.0 to 50.0. As a rule, the dark-colored honeys had a higher diastase content than the light-colored honeys. Cali-

fornia orange honey was found to be unusually low in diastase, the content ranging from 1.0 to 13.9. Alfalfa honeys were also noticeably low in diastase.

The California Agricultural Experiment Station conducted investigations which indicated that pure unheated honeys having a diastase content less than the German minimum standard were not uncommon, and that there was a definite correlation between the diastase activity and the number of pollen grains contained in the honey. Orange honey, which has a low pollen content, was shown to have little diastase activity. Investigators in England have also recently determined that a number of genuine honeys are naturally low in diastase.

It is possible that the honeys produced in Germany normally have a higher diastase content than is found in some honeys in the United States. Germany classes honey having a diastase content less than 8.3 Gothe units as being adulterated, and less than 17.9 as being "suspicious."

The results of these various investigations, according to H. S. Paine of the Bureau of Chemistry and Soils and J. I. Hambleton of the Bureau of Entomology, appear definitely conclusive, and indicate that less importance should be attached to the diastase content of honey. Nevertheless, producers and shippers of honey are warned that the German requirements regarding the diastase content of honey are still in effect, and when it is necessary to liquefy granulated or unusually heavy honey, which may later be included in export shipments, the heating should be done with great care, and cooling of the honey should follow at once.—U. S. D. A. Release.

Mississippi Cleaned Up

The October report of the state plant board states that only three cases of American foulbrood were found in Mississippi during the preceding three months, that they were promptly burned and that no disease is now known to be present in the state. Hurrah for Mississippi!

Listen In

Announcement is made of a talk by Dr. A. P. Sturtevant, of the Inter-mountain Bee Culture Laboratory, over Station KOA, Denver, on Wednesday, March 4. His subject will be "Honey, a Pure and Wholesome Natural Sweet." The time will be from 5 to 5:30, standard mountain time, and one hour earlier central standard time.

At the same hour on Wednesday, March 25, R. G. Richmond, deputy state entomologist, will talk over the same station on "Timely Hints on Bee Culture." Prof. Richmond will speak again at the same hour on Wednesday, June 3, on "Getting a Honey Crop."

INTERESTING PERSONALITIES

George W. Gregg



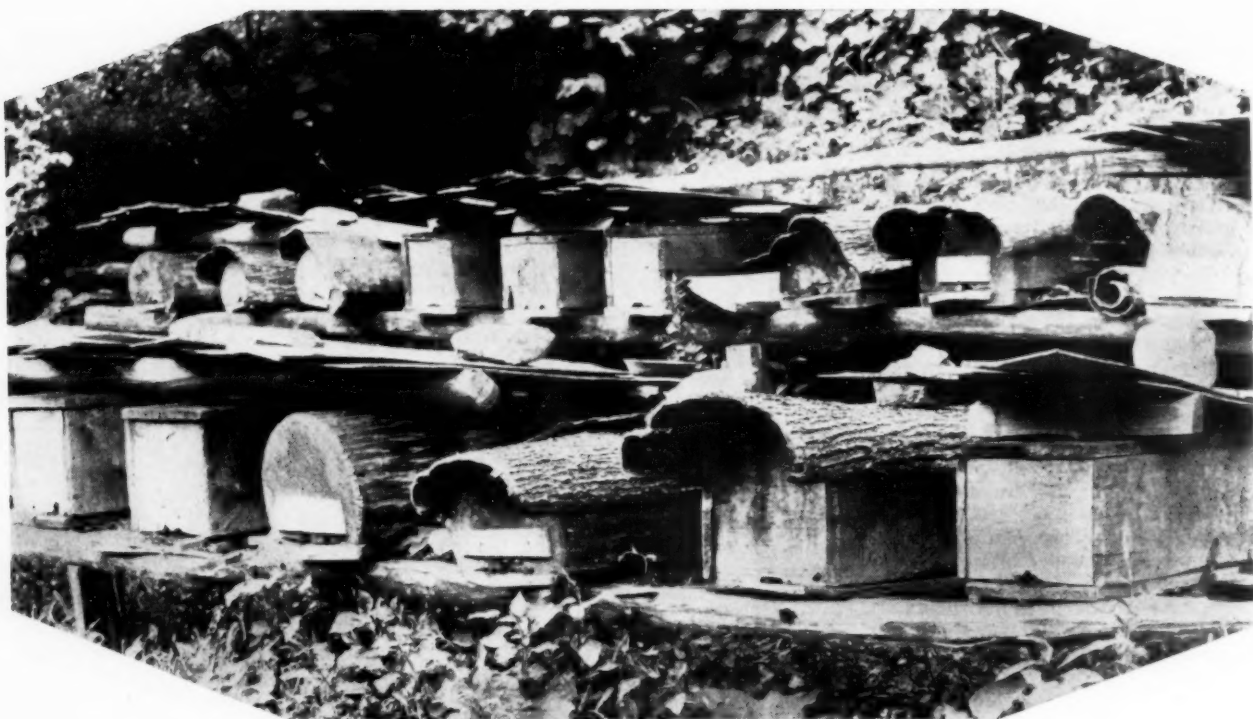
On the former site of a military fort in the Missouri River Valley, not far from Garrison, North Dakota, is a very interesting farm. It is owned by a bachelor, George W. Gregg, who is a very unusual person. In addition to the large acreage of grain which composes the principal activity of the farm, there are several smaller enterprises. There are bees, of course, in a well kept apiary, producing large yields of honey from sweet clover. There is a small nursery of fruits and flowers and some most interesting plant breeding work with alfalfa, which we have not space here to describe. It is a spot worth going a long way to visit.

Most interesting, however, is the man himself. George W. Gregg has led a very adventurous life in years gone by and can tell some amazing experiences. A member of the United States Army in China during the Boxer rebellion, he had many narrow escapes and some unpleasant experiences, including being arrested as a spy and confined in a Russian prison.

With such a background of experience, he is enjoying the life of a countryman with his flowers and his fruits and his bees. Occasionally the bee men from the neighboring region gather there to hold informal meetings, with Gregg the center of interest. Drive over and attend the next one.

Who Makes Cottage Cheese?

One of our subscribers wants to get recipes for making cottage cheese for market. Who can give us some good recipes that we can hand on?



An Abkhasian apiary in the narrow strip of land between the Black Sea and the Caucasus Mountains.

Abkhasia and the Abkhasian Bee

By Gregory Mosolevsky

MY article in the American Bee Journal, October, 1928, "Abkhasian Bee," has the following editorial remark: "We give the above without comments on its correctness. We are not acquainted with 'Abkhasia,' as it is not found on any of our maps. We judge that it is a district of Georgia, which is itself composed of several provinces, one of which is Tiflis. Russia is so immensely large that a dozen provinces are comprised within its Caucasus. But if the Abkhasian bee has qualities reported above, we should be informed of it."

It is no wonder that America is not acquainted with the Abkhasian bee. Even we, inhabitants of Russia, only in 1873 heard Professor Boutlerov first proclaiming the Abkhasian bees' high qualities. But then the Russian beekeepers made very light of the discovery of Professor Boutlerov, and only since a very short time the proper attention was paid to the Abkhasian bees. At present the interest grows from day to day in high degree not only in U. S. S. R., but also abroad.

Abkhasia is a very small republic of U. S. S. R. situated in Transcaucasia, side by side with Georgia, but it is not Georgia. It is the narrow strip of land squeezed between the Black Sea on the west and the main Caucasus ridge on the east. From the seacoast up to the main

mountain there are all zones and climates, from the mild, fair sub-tropical one close to sea to the very severe, nearly polar one by the snows and glaciers of the main ridge. The economical potentialities of the region are enormous, but at present it is a poor, half-wild land, having no roads, very rare population of very low degree of culture, of very primitive demands and needs.

But if Abkhasia, in the wide circles of Russia, is famous as one of the most charming corners, with very mild sub-tropical climate, in the beekeeping world it is renowned for its excellent bee.

Abkhasia is very rich in bees. The mountains, the cliffs, the immense woods, which cover all the surface of the region, are full of bees. Every season innumerable swarms from the apiaries fly off to the woods. The Abkhasian bee lives under very hard conditions and is subjected to very severe selection, resulting in working out very bright qualities. The native beekeeping is very primitive; the beekeepers know only two operations as to bees: hiving a swarm and taking out the honey. All the rest of the time the bees are left to themselves. The hive generally used here is a halved block of tree trunk, about four to five feet long and hollowed after the manner of a trough, or a similar trough made of boards. Cover this trough with a board, fasten the

latter with two nails, make an alighting hole on one end of the trough, then turn it bottom upward and a hive is ready. After hiving a swarm, one closes the crevices with a mixture of cow dung and earth and covers the hive with a suitable piece of bark. One puts the hives on stands elevated above the earth about eighteen inches and very close together—that is a native apiary. Sometimes, instead of bark, one makes a common cover of shingles—of course of very simplified type—and then some stones. A hive of that sort, being thin-walled, is generally very cold in winter and very warm and suffocating in summer. There are plenty of cracks, clefts, holes, and the bees fly in and out where they find it most convenient. The bees endeavor, of course, to close some of them by bringing an immense lot of propolis. In winter the cover is renewed, of course, but no more winter protection is given. If we take into consideration that in the mountains the cold often happens 20° C. and colder, it will be obvious that a cruel selection of endurance must take place. Only fully vital colonies of bees can, under these conditions, live and prosper; in fact the winter losses are very heavy.

On the other hand, one can name Abkhasia a "greenland" in the strictest meaning of the word. You see everywhere the luxurious green

masses of foliage and of herbage, among which scanty flowers are scarcely observed. The struggle of life for the bees is very cruel. The bees must use all efforts, develop the highest activity, in order to earn a living and make any winter stores. Only colonies of vital strength survive. Undoubtedly, during many thousand years has taken place this cruel natural selection, resulting in the incredible activity of Abkhasian bees.

In consequence of all this we have here in Abkhasia the incomparable excellent bee: full of high activity, of strength, of endurance, very productive, and at the same time very peaceful. The northern beekeepers, doing feeding by a vessel with dissolved honey, were very surprised to see how Abkhasian bees, being in very large minority, contrived in two or three minutes to master the situation and force back the other bees. This bee often works under conditions of temperature when the bees of other races generally don't try to leave the hive. In the environs of Sukhum grows a grass (*Paspalum*) the pollen of which the bees like. They visit this grass long before sunrise, when it is cold and *Paspalum* is covered with our heavy dew. And, on the other hand, *Hovenia dulcis*, flowering in July, yields only in the hottest hours, and the bees, in the insupportable heat of July's midday, work on the tree so intensively that one can suppose they are swarming. In the spring our best wild honey tree—*Prunus divaricata*—is flowering, generally in very bad weather. When it mists, it rains; however, you can observe the bees are diligently working. In November, when everything is in full flowering, *Elaeagnus japon*, one can observe bees working long before sunrise at a temperature of 5 to 7° C. My attempt to set a strict moment of beginning of work failed; how early soever I came I found already the bees there. There unwillingly intrudes on me the thought of the bees working during all the night.

The peaceableness of the Abkhasian bee is not less wonderful. One can see at the native apiaries the calves, the cows, the horses ramble between the rows of hives or tranquilly graze there. Nobody heard of an animal killed by the bees. The black bees attack especially the horses at a distance of kilometers.

No wonder that the Abkhasian bee day by day grows more and more popular among Russian beekeepers. The most convincing moments are the poor seasons, which give a possibility of comparing the economical value of Abkhasian bees. When the black bees must be supplied with winter stores, the Abkhasian bees contrive to not only make sufficient winter stores, but give some yield.

Transferring from Eight-Frame Hives to Modified Dadant Hives

By Alfred H. Pering

The writer has just recently had some experience in transferring bees from the standard eight-frame brood chamber hive to the Modified Dadant hive, and noted a bit of "bee behavior," different from the usual run, that may interest your readers.

My method of procedure may not be the best, but it is effective and to me has been satisfactory. Until I learn a more simple and a way that is a shorter cut, I think I will continue it. I believe in beekeepers sticking to "their best liking" until they are convinced of a better way and prove themselves successful in their practice of the better way.

From time to time I come into possession of eight-frame hives of bees. These eight-frame hives are "swarmers." With this fact in mind, I proceed about as follows: To the bottom of an eight-frame hive body I attach a two-inch rim, using four cleats, so this rim can be easily and quickly removed and the hive body used again as a regular eight-frame brood chamber if so desired. Into this hive with its two-inch extension I place Modified Dadant brood frames with full sheets of wired foundation. On each outer side of these frames of foundation I place an Aspenwall slotted dummy frame. Any pattern of dummy frame will serve, but I like these Aspenwall dummies as swarm preventers—i. e., they help to prevent swarms.

When an eight-frame hive casts its first swarm, I hive this swarm with their old queen in the above described hive and locate it at or near a convenient spot for subsequent uniting with the second swarm that will be cast by this particular eight-frame hive. When the second swarm is cast, I hive this swarm with their virgin queen in a full-size regular Modified Dadant brood chamber in which only four brood frames of full sheets of wired foundation have been placed. I use the two Aspenwall slotted dummies as in the former case, placing all to one side of the brood chamber. I now have one swarm working to draw five sheets of foundation with their old laying queen and the second swarm with their virgin queen working to draw four frames of foundation. At the time the second swarm is cast, or very soon thereafter, I render the old hive helplessly queenless or force them to begin queen-cells anew.

By the time the virgin queen is mated and begins laying, I find all sheets of foundation are well along toward being finished into nice fully drawn combs. At this time I remove the old queen and unite the first swarm with the second by the newspaper method. As soon as all are

united and working together in full harmony, I lower the five frames from above into the Modified Dadant brood chamber below, looking out for any queen-cells that may have been started. I seldom find any, it depending upon how long the old queen has been removed before uniting and upon how long the five frames are left above. Queen-cells will not usually appear if this changing is attended to promptly.

I now have nine frames nicely drawn, brood in almost all of them, in a Modified Dadant brood chamber with the two Aspenwall slotted dummies, one on each side. I now unite the old colony—i. e., the original eight-frame hives that cast the swarms,—using a queen excluder beneath the newspaper, making sure there is no virgin queen or queen-cells. This gives me a good, strong colony with a young queen on nine Modified Dadant brood frames, with an eight-frame brood chamber being used as a super. I think I get about as much surplus honey the current season as I would have had I managed otherwise, and at the same time I get the transfer, with a very nice, desirable set of brood combs below.

"Pat" Candy Bar Goes Big on Coast

An interesting development in the use of honey for candy making is reported from Los Angeles, California, where the manufacturers are making what is known as a "cooperative bar." Lots of time and money have been wasted by the candy men in trying to market a multitude of different bars. Every now and then each manufacturer would put out a new bar with a fancy name; it would have a short run of popularity and then die down. Then a new brand would have to be evolved.

A candy trade authority not long ago declared that there were over two thousand different bars on the market and only a few of them were having any real sale. A correspondent of Western Confectioner reported on the new plan whereby a number of confectioners got together and pushed the same product:

"The first cooperative bar made by manufacturers who belong to the local zone of the Western Confectioners' Association is going over big. The name of the bar is "Pat" (It's Pat With Me), and it makes particularly good eating, as it consists of honey-nut nougat, caramel and malted milk. The association is giving it wide publicity by means of stickers and posters, and dealers are cooperating by giving it special prominence in their displays; in almost every case the dealer has placed a box and poster on top of his display case."

F. H. Madison.



This is how Jes does it. A two-way picture of his trailer, pleasure car combination that almost made him "a migratory beekeeper."

Moving Bees With a Ford Trailer

By Jes Dalton.

WHILE in Louisiana history, as far as the writer is concerned, 1927 will go down as flood year, 1930 will be forever remembered as moving year for "Verily, almost did I become a migratory beekeeper."

To make a long story short, I had located at St. Francisville after the flood of 1927 but found it such a poor place I could not get anywhere at all. Having directed the flood relief reconstruction camp at Kenner in 1927, I knew of its wonderful possibilities, so on January 5, after trucking all my bees in, I loaded them and equipment into a stock car consigned to Kenner, having previously rented a fine location and bought out the occupant.

The first week in January, I unloaded and trucked them on to stands. They wintered and built up splendidly, but I had hardly been located two months when the United States Government ran a levee survey right smack through my house and both my bee yards. However, I didn't get het up but proceeded to fix up and start out on a pilgrimage, but on reaching Washington, D. C. with my family I was notified to remove everything I possessed off the United States levee survey in 20 days. Now this was the hottest of the summer, middle of July.

I drove back in four days, hunted up a vacant lot and proceeded to tote, by way of elbow grease route, the whole outfit over to the vacant lot. In the meanwhile the levee board rolled my house, garage, storehouses, etc., a few blocks back and across and up a suburban car line, away from my bee yards and in a undesirable location. Then levee work began, adjoining the lot where the bees were setting.

So it was up to me to hunt up another location and move. By this time moving and lugging bees around had got me in "dutch" with the city dads and I had that to worry over too.

I now had a 1930 Model A Ford coupe. After studying the situation over I decided for interurban beekeeping to build me a trailer of the same material with every part interchangeable, thus giving me an extra wheel and tire for my whole outfit. Then when not using the trailer, I would have in addition, those two wheels and also a way to use to advantage well worn tires. I would also have an extra casing and tube when one went flat on either car or trailer without the expense of having to keep odd sized or different wheel equipment on hand.

It would give me a handy little outfit to truck my bees and equipment around and drop it off and still enjoy my small pleasure car. I built it to take six hives handily, setting three on each side.

A little explaining is necessary. Down here we always winter all our combs in supers on the colony, so there would be some six stories high full depth, and some only one, and all the way between. As a rule when there were only three stories I just stuffed the entrance with grass and daubed the leaks with clay, and set them on the trailer, not even tying them down or blocking them.

The road was so narrow that I had to park the car and trailer up on the interurban track and carry the bees across the road, but I moved 150 colonies in this way, some of them six stories tall and weighing 25 pounds, along with all the material to make hive stands, etc., and never smothered

a colony nor did I have one fall out, and only a few had the covers tacked on or strips tacked on the sides.

However, I did fasten on what bottoms were necessary, and I believe if I was going to have to do much moving I would nail all bottoms solid and leave them nailed.

On the whole, the Model A Ford equipped with a trailer of the same material makes a very handy and inexpensive equipment to handle bees where one does not want to invest in or keep a more expensive truck, and it would be no trouble to handle up to twice the number, say 300 colonies or more.

Besides, I have a nice pleasure car. I write this after moving hives, concrete stands, railing household goods, three times in one year, handling packages, taking off and trucking supers of honey, cases of bottles, and so on.

Bargain Time

One of the members of the California State Beekeepers' Association came into the office of the secretary the past week to tell us we had the right program for 1931. He finished by saying men know for certain only two things: first, that they know nothing, and, second, that nothing is impossible.

Some of our younger beekeepers are setting a good example for all of us. They believe that nothing is impossible and that we can do anything we can think. So now, when things are so discouraging, they are buying bees wherever they can find them for sale. Watch them. You will see them succeed.—Cary Hartman, Cal. State Bks' Asso, "Betimes."

The Bird of Paradise Flower

By John H. Lovell

MANY beekeepers find it difficult to believe that there are flowers which are largely or wholly dependent for pollination on butterflies, or moths, or bumblebees, or flies, or birds. From many of these blossoms honeybees are wholly excluded, and from others they are able to obtain only a portion of the nectar. It is, of course, desirable for obvious reasons that beekeepers should know that there are such groups of flowers; and the best way to make this clear is the publication of photographs and descriptions of flowers that are so highly specialized that it is at once evident from their appearance to what insects or birds they are adapted. No one can fail to see that the Madagascar orchid, a photograph of which appeared in the May number of the American Bee Journal, must be pollinated by hawk-moths. Only a hawk-moth has a tongue long enough to reach the bottom of the foot-long nectary. It is the most remarkable hawk-moth flower in the world.

In this article we present a photograph of the most typical bird-flower known, the bird-of-paradise flower, *Strelitzia reginae*. It well deserves its name from its large size, bizarre form and brilliant coloring. The sepals, or outer floral leaves, are a beautiful orange-yellow, while the inner petals are a violet blue, a very unusual combination of colors. The peculiar form of the flower is strongly suggestive of a bird, the two upper, upright sepals representing the wings and two of the petals a beak.

Granting that this resemblance is merely a coincidence, yet it is a very remarkable fact that the flower in its native habitat in South Africa is pollinated by birds, the sun-birds, a family which, like our humming-birds, are especially adapted for gathering nectar. This relationship is certainly not a coincidence.

It is easy to understand how bees, which feed their brood on pollen gathered by means of their legs and jaws, should be effective pollinating agents. But how can small birds, which feed only on nectar and insects, transfer pollen from one flower to another? Sun-birds, by means of their long, curved beaks, can gain access to the flowers of this plant, enclosed by stiff and high leaves, more easily than bees. The only role of the three orange-colored sepals is to render the flower very conspicuous; but of the three violet-blue petals, the upper one is very short, broad, and hooded, protecting the nectar, but the two lateral petals are long and narrow and partly united, inclosing the five long anthers, which produce a great abundance of pollen.



Bird of Paradise Flower, *Strelitzia reginae*, emerging from the sheath, or spathe.

The pollen is bound into masses by numerous threads of one to several cells, so that a large quantity of it can be drawn out at the same time by a needle. This is an adaptation which transfers to the birds a large



In full bloom.

number of pollen grains and is of no small importance in bringing about pollination.

When a sun-bird comes to the flower for nectar and presses down on the "beak," the two long petals separate and the pollen masses, adhering to the feathers beneath its bill, are carried to another flower and deposited on the stigmas, which project far beyond the anthers. Thus cross-pollination results. Two species of sun-birds have been seen to visit

the flowers in South Africa. In the greenhouse the flowers will produce seed if hand-pollinated.

The genus *Strelitzia* is named in honor of Charlotte Sophia, the wife of George III, who came from the province of Strelitz in Germany, and was a patron of botany. The species *S. reginae*, or queen flower, is a vigorous herbaceous herb, about three feet tall, with leaves a foot long springing from the root and resembling those of the banana plant. From four to six flowers are produced in a boat-shaped spathe, or sheath. It is not a difficult plant to grow, if given a strong soil and plenty of water and sunlight.

Bird-flowers are found chiefly in tropical and subtropical regions, as in South America, southern Africa, India, and Australia. In America they are pollinated by humming-birds, of which there are four hundred or more species; in South America, in Africa and India by sun-birds, and in Australia by honey-suckers — three groups which are similar in size, form, brilliant colors, and swift, impetuous flight.

There are no native bird-flowers in Europe, since there are no honey-birds on that continent, but woodpeckers may seek flowers, both for nectar and small insects. The large flowers of *Carolinea* in South America, which have a great mass of stamens with immensely long stems, are not pollinated by humming-birds, which are too small, but by woodpeckers and other large birds. In the world about one hundred and sixteen flowers have been observed to be pollinated by birds, and some two hundred and eighty-four kinds of birds have been seen to visit flowers. Maine.

Honey Trade in France Slow

According to trade reports, sales of domestic honey in France fail to show a normal annual increase. It is stated that there are about 1,500,000 beehives in the country, yielding between 33,000,000 and 44,000,000 pounds of honey. After the war, prices steadily increased to the peak level of 21.3 cents per pound, as compared with 10.5 cents in 1913. Current prices, however, are quoted at 10.7 cents per pound.

Honey production, even at these levels pays, but it is reported that the quality of domestic honey was not so good and packing and methods of selling not as good as they should be. As a result, various brands of imported honey enjoy a demand in the French market.—Assistant Trade Commissioner George W. Berkalew, Paris.

Express Rates on Package Bees

By R. B. McCain

Beekeepers in every part of the United States will be vitally interested in the effort of a committee of the California State Beekeepers' Association to secure a reduction in express rates on package bees. Buyers of package bees are now paying one and one-half first class express rates on the shipments they receive. There is a possibility that this rate may be reduced to first class, which would mean a saving of one-third of the transportation charges now paid by all buyers of package bees. A reduction of this kind would mean a great deal more than what is told in dollars and cents.

The present express rate of one and one-half first class was put into effect when the handling of bees in transportation was considered a troublesome and dangerous undertaking by the companies involved, as well as all their employees. Like many other rates of this kind, the charges were purposely made high either to discourage shipment or because there was a false sense of danger involved in handling live bees in any kind of a package. But there has been a radical change in recent years in the matter of the movement of bees in packages from one part of the country to another, and even over the borders into other countries. Hundreds and thousands of package bees are now shipped every year, and there is a growing demand for these packages by both beekeepers and fruit growers.

The companies that transport these shipments of bees very naturally do not want to give up any part of their revenue, and probably will not do so, unless it can be shown that it would be to their advantage to reduce the rates. That is exactly what this committee will attempt to do in a hearing before the Interstate Commerce Commission, but the committee cannot do the work without the active cooperation of the buyers of package bees. A questionnaire will be sent to all buyers of package bees, with a request to fill out the blanks and send them to the address given on the blanks. If any reader of this announcement has not received a blank, he may obtain them and all necessary information from Mr. Frank E. Todd, Department of Agriculture, Sacramento, California.

The committee of the California Beekeepers' Association is composed of Jack Wing, chairman, Art Banta, Thomas Burleson, Karl Koehnen, and G. J. Triphon, and has the cooperation of the California State Bureau of Commerce and the State Department of Agriculture. The committee has sufficient official backing to do all that it has set out to do, but without the cooperation of the buyers of pack-

age bees its efforts would be greatly handicapped, if not defeated. It is a time for everybody to lend a hand.

Honey—"Every Friday Night for Tea"

By J. M. Barr

When I visited England two years ago I had the pleasure of addressing meetings of England beekeepers at Harpenden and Cambridge. They all were fully convinced that sainfoin honey was indeed the nectar of the gods, and with much benevolence I smiled at their assertion. At Cambridge I discovered that they were willing to fight for their belief.

A big-hearted, aggressive Englishman took exception to my statement that our northern clover honey led the world in flavor and body, and in spite of my eloquence they refused to believe. I loved them for their stand on the matter.

I am personally acquainted with hundreds of beekeepers in America, and all of them together would not show as much enthusiasm for their product as that one lone Englishman showed for his.

We visited our old Scottish home and while there paid, to a Scotchman, 75 cents for a section of honey, inferior to ours in many respects.

I send a can of honey to Aunt Mary every Christmas. When we arrived at her home she proudly showed me a row of little jars, all carefully sealed. To my enquiry she told me they were filled with the honey I was sending. I told her I expected her to use it, not hoard it. Note her answer: "We use it for colds, and we have it every Friday night for tea."

If the honey producers of America would tell the waiting public that they had a God-given gift for them, honey prices would be at their proper level, and if they would adopt the war cry, "Honey every Friday night at supper time," we could never supply the demand. Wisconsin.

May Be Rabbit Brush

A letter from Archie I. Thomas, of Coffee Creek, Montana, says:

"I have a fall surplus flow from a plant similar to willow herb—that is, it has a leaf long and slender like a willow and the bark of the woody stems resembles the scrub willow bark. It has a new growth of green weed-like shoots running up from the old wood each year, and on this appear the blossoms, which look like the hairy goldenrod bloom. The seed from this brush is downy like dandelion seed. The leaves when mashed have an astringent odor not so pleasant to the nose. The range stock eat the leaves and tender shoots and keep fat on them. The honey is light amber in color, nearly golden, very transparent, rather thin, and has a

peculiar sweet, sickening taste when first gathered, but gets better with age. It will yield, wet or dry, about one hundred pounds per colony. Drouth or moisture does not seem to affect the bloom, but up on the hills it never reaches a height of more than eighteen inches, while here in the valley it grows to a height of three feet or more. Ask Mr. Pellett to name it for me. Everyone here calls it yellow sage, but it is no relative of the sage, though it grows among the sagebrush."

(If Mr. Thomas will look at the picture of rabbit brush in the article on Montana bee pasture in the January number, he will perhaps be able to tell whether or not the plant he mentions is rabbit brush. His description most nearly fits that plant of anything found in Montana with which I am familiar. However, I do not know whether rabbit brush is found in the region where he lives. It is brush common in the southwest part of Montana between the mountain ranges, but is not generally distributed east of the main range in the regions which I have visited. His general description fits it so well, however, that I would guess that it is rabbit brush which gives him his fall crop.—F. C. P.)

Russian Hot Drinks Made With Honey

The Moscow Bee Journal (Ptchelovodnoe Djelo) has recently published a beekeeper's pocket manual, from which we obtained the following recipes for the hot drink known in Russia as sheeten (more often rendered as "sheeten" in English).

(1) Mix 1½ pails of water with 6 pounds 10 ounces to 8 pounds 13 ounces of granulated honey. Put one zolotnik (3/20 oz.) of cardamons, ½ zolotnik of nutmeg, and 12 cloves into the solution and boil thoroughly for three or four hours. Skim off the scum as long as it forms. Filter and serve hot.

(2) Ginger Sheetten. One pail of water, 6 pounds 10 ounces sugar. Boil thoroughly and skim until one-sixth part has evaporated. Then add 2 pounds 10½ ounces to 3 pounds 8½ ounces of honey, about ½ to ¾ ounce of ginger chopped up fine, and 10 to 15 cloves. Boil for two and one-half to three hours, filter through muslin and serve hot.

(3) Raspberry Sheetten. One pail of water and 4 pounds 6½ ounces of best honey, with ½ ounce of cinnamon. Boil thoroughly until one-third has boiled away. Allow to stand for half an hour, then add the juice of 1½ to 2 mugsful of fresh raspberries. Stir. Boil down a little and color with cochineal. A. D. B.



More Adventures of the Bee Fairies

By Aunt Laura

Chapter 12 — "Enemies"

"SPEAKING of being afraid of mice," said Yellow Band, who had just joined the group. "I wonder if it ever occurs to human beings how very many enemies we bees have to watch? I assure you it keeps us constantly on guard."

"It certainly does," replied Buzzy, a bee that had recently been introduced. "But did you ever stop to think that if we bees had no enemies we would grow lazy and inefficient?"

"True," added Fleet Wing, "it is these very trials, these enemies, that keep us alert and active. Of course, some that we consider enemies are really not dangerous, but are just annoying. For example, take the bumblebees. They smell our honey and wander in to steal it. We make short work of them."

"How?" asked the children.

"Oh, we grab hold and push and bite and pull out their pretty velvety hairs, so bumblebees are mighty glad to get away with their lives," laughed Buzzy.

"Yes," added Fleet Wing, "and sometimes lizards crawl in, but we get rid of them in a hurry, too; but honestly I do not believe the creatures that crawl into our houses are nearly as dangerous and destructive as those we encounter outside."

"That is true," replied Yellow Band. "Here, Buzzy, suppose you tell these children of the adventure you had yesterday. I am sure they would enjoy hearing about it."

"Indeed we would," cried the children. "Please tell us,"—for I assure you bee fairy children are quite as fond of stories as any other sort of little folk.

"Yes, it was an adventure. I shiver every time I think of it. You see, it happened this way," she said as she snuggled down comfortably on a bit of projecting comb and her listeners gathered closely about her.

"I had gone out for water—you remember how short we were of water yesterday—and had just been to the brook beyond the stepping-stones."

"The same place we got our water," Fleet Wing explained to the children.

"We bees have formed the habit of going there; it is so very convenient."

"I had just had my drink and was resting and cleaning up a bit when I noticed half a dozen or so of lazy green flies dozing in the sunshine. Then, zip! one of them disappeared. That it had not flown away I was certain. Yet what had become of it? Then, zip! another was gone, then a third. I began to be suspicious. Perhaps it was no safe place for an honest bee like myself. Then, zip! the fourth vanished. I knew danger was near, yet I was wildly curious to know what had become of them. Then a flash, a lightning quick movement—and I too would have vanished if a little breeze at that moment had not stirred the leaf upon which I was sitting and I saw my enemy and jumped just in time. I was not a moment too quick, I assure you."

"What was it?" cried Dickey breathlessly.

"A toad—just a ridiculously homely brown toad sitting there under another leaf and quite out of sight, but conveniently within reach of such foolish fellows as green flies and myself. There he sat, and with that long, skillful tongue of his, a mere whisk of a tongue, he was ready to snip down whatever insect came near enough. You may be sure I did not tarry there long. I came home as quickly as possible; and you also may be sure I shall never stop to rest there again without taking a mighty careful look about me for such as he is."

"Yes," added Fleet Wing decidedly, "we bees have to watch out for toads."

"Why—do toads eat bees?" asked Dickey incredulously.

"Indeed they do. We are especially choice morsels to them and they gobble us down at every opportunity. With that long tongue, a toad can snatch up a bee before she can say 'scat,' replied Buzzy.

And Yellow Band added: "Yes, and they have such an uncomfortable way of hiding near where we go for water, and are just the color of mud.

Yes, indeed, toads are very dangerous to us bees."

"Then there is the dragon fly," remarked Brown Foot. "They are very dangerous too. I had an adventure with one this very morning."

"A dragon fly!" exclaimed Robert. "Oh, we know what they are. They have beautiful gauzy wings and long, narrow bodies—"

"Yes, and they go darting about, specially over the water when we are swimming; we call them mosquito hawks," added Dickey.

"I suppose they do eat mosquitoes," answered Brown Foot, "although I do not know; but to us bees they are dreadful creatures, sharp of eye and swift of wing. We must be agile indeed to escape from them."

"But please tell us your adventure," said Doris May timidly.

Brown Foot smoothed down her wings and began: "I was just returning with an enormous load of nectar and was flying against the wind, eager to get home as quickly as possible, when right down out of the distance swooped one of those awful dragons, a name which certainly suits them perfectly. I dodged; I swung around and dodged his second attack, then I plunged ahead as rapidly as I could. Frightened? Oh, my! The cruel creature made a third swoop at me, but I fortunately had a head-start and you may be sure I rushed home in the shortest possible time. I certainly was relieved when I reached our door step safely."

"Of course you were," remarked Mildred sympathetically.

"They tell me," remarked Aunt Laura, "that many times young queens out on their wedding flight are caught by these creatures."

"Yes, indeed. Many a fine young queen has vanished—thanks to these cruel monsters, and I suppose many a drone also has made a meal for one of them; but of course there are such quantities of drones that a lot of them can usually be spared. If only these creatures would be considerate enough to let queens and worker bees alone!"

"Don't spiders catch bees too?" asked Dickey.

"Yes, indeed, they are another of our most disagreeable enemies," returned Brown Foot. "And, by the way, did you hear how we fooled a spider not long ago? It was really a joke."

"Oh, please tell us," urged the bee fairies.

"That spider evidently thought we did not have very good sense, for late one evening she built a most beautiful web right over our doorway and sat down to wait for us to fly into it. I presume she expected us to rush right out and furnish her a most excellent breakfast; but we did not, for that very night a heavy dew collected all over that web and it shone up

and glimmered in the sunshine like a piece of exquisite silver lace. That silly spider waited there for us three days, wondering, no doubt, why we failed to get tangled in her trap. Then a big grasshopper came along and broke it down."

"But did you have to stay at home all that time?" asked Dickey.

"No, indeed," exclaimed Brown Foot. "You see we just dodged around and under it. She had forgotten and left a neat little hole beneath it, and the dew drops shone upon it so beautifully that we could not fail to be reminded of it the first thing each morning."

"Well," spoke up Fuzzy Face, a newcomer to the group, "my most exciting adventure was with a spider, and my own carelessness nearly cost me my life."

"How?"

"You may not have noticed it, but down at the end of the zinnia bed, well hidden by leaves, is the web of a very large black and yellow spider."

"Oh, yes, yes," cried the children, and Mildred started to speak, but stopped abruptly.

"I saw her there," cried Dickey. "She's truly an enormous one. She sits there in the very middle of the biggest web. Rob and I were watching her this noon."

"Yes, it is a big web, and a big spider too," returned Fuzzy Face. "I shall not soon forget her. I was busy getting pollen from the zinnias and should have been watching more closely what I was about; but I had just started from home, and you know how rushed we are these days, so I guess I was careless—more careless than a respectable bee ever should be. Well, something large and round flew past me so unexpectedly that I was quite disconcerted for a moment and made a quick movement to dodge. I did not get a chance to see what it was, and before I had time to know just what had happened, there I was—grabbed and being handled mightily rough by that monstrous spider. Oh, oh! I shall never forget it. I struggled with all my might. I buzzed, I bit, I fought; but that black and yellow ogre had me and was trying to spin her meshes about me. I remember wishing she would bite me and have it all over; but I struggled on and on, and the bands about me were drawn closer, closer, until I quite lost all hope of escape. Then I heard a human voice."

The bee fairy children waited breathlessly, the little girls exchanging glances of understanding and sympathy. Something was said about a "ball."

"Then I think I must have lost consciousness a moment. Then someone said: 'Oh, look—look at that poor little bee—caught in this web—"

(Continued on page 130)

Suggestions for Using Honey

By Juliette Frazier

Most of us have a "sweet tooth," but many of us cannot eat much sugar without suffering from ill-effects. Then why not substitute honey in place of sugar? Honey is one of the purest of foods; it is a great energy builder and may be substituted for sugar in all kinds of cooking; it has the same value in sweetening and as a nutriment. The change it offers in flavor gives it an added value, inasmuch as it furnishes a variation in the taste of food combinations, and because of that may stimulate the appetite.

The housewife need not hesitate about using honey, thinking she must have special recipes—she may use any recipe with this change. In using honey instead of sugar, use one-fifth less liquid—that is, if a recipe calls for one cup of milk, use four-fifths of a cup, as honey is 20 per cent water. Use a scant cup of honey to every full cup of sugar required.

If the housewife will use honey instead of sugar in making bread, she will find little trouble with her bread becoming dry, as honey draws moisture and improves both bread and cake.

When making a boiled frosting for a cake, add one tablespoonful of honey when it is nearly ready to be spread and your frosting will not harden. The flavor of mousse and all varieties of ice cream is much improved by using all or part honey.

Use warm honey and chopped nuts as a sauce for plain ice cream. For the children who use sugar on their cereal, honey will be a welcome change.

Try honey in your cooling summer drinks.

Honey will also be found most satisfactory in canning fruits, making jams, jellies, etc.

Steam Honey Pudding

- ½ cup honey
- 2 cups bread crumbs
- ½ cup milk
- 2 eggs
- Grated rind of half lemon
- ¼ teaspoon ginger
- ½ teaspoon lemon flavoring
- 1/3 teaspoon salt
- 2 tablespoons melted butter

Mix all ingredients, lastly add the eggs, well beaten. Pour the mixture into well-buttered pudding dish and steam two hours. May be served with whipped cream or fruit sauce.

Honey Sponge Cake

- ½ cup sugar
- ½ cup honey
- 4 eggs
- 1 cup sifted flour
- A pinch of salt
- ½ teaspoonful vanilla extract

Mix the sugar and the honey and boil until the syrup will spin a thread when dropped from spoon. Pour the syrup over the yolks of the eggs, which have been beaten until light. Beat this mixture until cold, add the sifted flour, salt, vanilla extract, and fold the beaten whites of the eggs into this mixture. Pour into a pan lined with buttered paper and bake three-quarters of an hour in a slow oven.

Honey Bran Cookies

- ½ teaspoon soda
- 3 cups of bran
- ½ cup sugar
- ½ cup honey
- ¼ cup chopped dates
- ½ cup milk
- ½ cup melted butter
- ¼ cup chopped walnuts
- ¼ teaspoon of each, cinnamon, cloves, nutmeg

Mix the bran with the soda, add the spices, dates and nuts. Then add the sugar, the honey, the milk, and the butter. Drop from spoon on creased cookie tin and bake fifteen minutes.

Honey on Airplanes?

On page 104 of the January, 1931, issue of the Ladies Home Journal is an item suggesting the possible use of honey as a preventive of the formation of ice on the wings of airplanes during cold weather. A part of the item follows:

"We've just been told that candy-coated airplane wings are the happiest solution thus far to the problem of dangerous ice formations when flying through snow and sleet. While oils, greases, wax and paints have proved only partly effective, a thin coating of sugar, glucose, honey and syrup have prevented the ice hazard in flying temperatures as low as four degrees below zero."

New uses for honey come up every day, but this is the best yet. If effective, it should prove a very valuable aid to aerial navigation in winter. Pilots whose ships were provided with honey-coated wings would also be assured of a food supply if forced down in an uninhabited district. In such case they'd have to "lick" the plane to get it.

N. N. D.

Something More to Tax

Representative J. M. Cason, of Lykesland, South Carolina, has discovered something more to tax, according to a news item in the Columbia State. "He would tax every stand of bees, 'as some persons have 200 to 300 hives, valued at \$5 each on the average. Honeybees are a profitable investment when managed right and there are thousands of hives in the state. Most everything else has been taxed already.'"

Is Honey "Bottled Sunshine"?

By Axel Holst

Referring to the discussion as to whether the health elements in honey are vitamins or something else, I have found an article in "Farm and Fireside," under the title "Bottles of Sunshine," relating to cod liver oil.

This article is by John M. Evvard, in which he says that "To say that cod liver oil is bottled sunshine is not far-fetched. Animals whose rations are lacking in vitamin D, and whose environment does not provide a sufficiency of direct, unfiltered rays of sunshine, may be greatly benefited by giving them cod liver oil.

"This is produced from the codfish, which lives most of its life in the shallow waters of the eastern ocean, continuously irradiated by the sun overhead. The short rays of the sun convert some of the material in its body to vitamin D. It is stored with the oils in the liver cells, and it is this vitamin D in the cod liver oil that is of so much importance in human and animal nutrition."

I must say that my own notion has been the opposite—that is, that the elements in cod liver oil enabled the cod to live in the sunless Arctic Sea, possibly under ice. I should not be surprised if the health elements in honey, whether they be vitamins or something else, are there to enable bees to raise their brood in the sunless hive.

I should not, therefore, be surprised if honey is found beneficial to children in cities where they are sunless and where the conditions are congested as in a beehive. Also, that honey will eventually be found to be "Bottled Sunshine," good for everybody.

Virgin Islands.

One Way to Get Around Corn Sugar

A clipping from the Chicago Daily News on corn sugar, written by D. Davidson, Chicago, is repeated here:

"I do not believe the action of Secretary Hyde in allowing corn sugar to be used in place of cane sugar was the proper thing. No one will deny that corn sugar is inferior to cane sugar; it is less sweet, is more fermentable and has an unpleasant flavor. Therefore to substitute it for cane sugar without acknowledgment is fraud.

"It seems to be a case where the influence of the corn growers is greater than that of the cane and beet people, and the consumer is not considered. However, the manufacturers of high-grade products have one recourse: They can label their goods: 'Contains no corn sugar.'

"We wouldn't be at all surprised if that was one mighty good way to get around it."

H. H., North Dakota.

Clear H Crystal
HONEY JARS
will sell your honey

No panels to catch shadows which darken the color. Beautiful in Clarity and Pattern, and Strength in Construction.

4 SIZES - Individual, Half Pound, One Pound and Two Pound. Accurate Graduation.
WRITE FOR SAMPLES AND PRICES
HAZEL ATLAS GLASS CO.
WHEELING, W. VA.
WORLD'S LARGEST MANUFACTURERS
GLASS FOOD CONTAINERS

PACKAGE BEES

I shipped one customer in New York 994 three-pound packages of bees the past season, and of these only 41 packages arrived in bad condition. I had already shipped the same customer 500 packages in 1929. I am in position to give you the same satisfactory service. There has never been any foulbrood in this section of Georgia. I use liquid feed only. Price per package, any quantity:

2-lb. package with queen—1, \$2.75; 5, \$2.50; 25, \$2.40; 100, \$2.25
3-lb. package with queen—1, \$3.50; 5, \$3.25; 25, \$3.15; 100, \$3.00
Nuclei—2-fr. with queen, \$2.75; 3-fr. with queen, \$3.50—any quantity

Local representative for R. G. Dun & Co. past twenty-five years

N. L. STAPLETON Colquitt, Georgia

Palmetto Queens 50c Each

Back on the job again with more Palmetto Queens. 1931 prices as follows: One queen, 60c; half dozen, \$3.50; dozen, \$6.50. All queens reared from imported stock. Rear three-banded only. Guarantee safe delivery. No disease.

C. G. ELLISON -:- Belton, S. C.

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40-page book free—Describes—quotes low prices "Kerlin Quality" Trapped. Contest Winners. Greatest winter layers. Disease free. Highest quality. Low cost. Free feed with chick order. Big discount. Chicks—stock—supplies. Kerlin's Poultry Farm, 212 Walnut Road, Centre Hall, Pa.



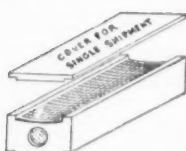
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The kind WE use in our extensive Michigan Apiaries where WE produce honey by the carload. ALL ITALIAN STOCK. Service guaranteed. Stock bred for honey getting and gentleness. PRICES RIGHT. Let us name you prices on any quantity.

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Send for circular or samples.

A. B. Pinard, 810 Auzerais, San Jose, Calif.

IF YOU WANT BEEES WE HAVE THEM

This is a small ad, but there are lots of bees behind it, and as good as the best; from beekeepers of 22 years' experience and the best outfit in the State of Georgia. 1800 colonies and 9 years' shipping record with no complaints reaching our publishers and very few reaching us.

We fill our promises. No delay. Full weight. Italian bees. No drones. Any kind of package. Via express only.

J. G. PUETT & SON
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PURE ITALIAN BEEES AND QUEENS

Two-pound package with queen \$2.50

Select untested queens 1.00

Select tested queens 1.25

J. ALLEN
CATHERINE . . ALABAMA

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

BEEES FEEDING ON SHORTS

1. Please tell me what makes bees go after shorts. We are feeding our chickens shorts, corn and cottonseed meal, and it seems as if the bees are crazy about the shorts, although they have plenty of honey, about fifty pounds to the colony.

2. Can a lard barrel be used for a settling tank if all of the lard is burnt out?

TEXAS.

Answer—1. Bees harvest shorts, or flour, and carry it to the hive on their legs to use in place of pollen to make food for the brood at times when there is no pollen.

Some of our scientists say that it is not of any value to them. But we have fed hundreds of pounds of it to bees in spring seasons and thought they were using it.

2. I can hardly answer that question, because much depends on the condition of the barrel. However, it does not strike me very favorably, because I would be afraid that the lard might have given more or less of a rancid odor to the staves of the barrel. I would prefer to use a barrel having contained syrup of some kind. But the best thing would be a tin tank.

MOTHBALLS FOR BEEMOTH

Will mothballs keep waxmoths out of combs if they are stored in the bodies tiered up and tight? I have some equipment I would like to store for two or three years. What is the most practical way? I will not be there to look after it and do not want to sell. I have thirty Modified Dadant hives near Lancaster, Pennsylvania, that I bought new this spring. They are two-story hives. I started them with three pounds of bees and three frames of brood and fed them 300 pounds of sugar to start them off. When I left there the first of September they were in bad shape; by that I mean they were light in stores and brood rearing had practically stopped and they were bound to swarm for lack of stores; the honeyflow was over and no prospects of a late one. I put screen wire on the entrances to keep out mice this fall and just let them go, as I was broke and had to go to work at my trade, electric work. I am going down there the first of November and pack up the remains; I know that they will be too weak to winter over, so I am going to kill them all and store the equipment. I sure had a tough break for my first year—1,000 pounds from 108 hives. Well, I am not going to quit; I am going to try again next season.

PENNSYLVANIA.

Answer—If you were to put away those combs with no moths nor eggs of moths in them, in November, I have no doubt that the mothballs would be sufficient to keep out the moths. But it is quite probable that there will be both eggs and moth larvae in the combs, and I do not believe that the mothballs would drive them out or kill them. It is better to give all those combs a good treatment with brimstone. Enough brimstone to kill the flies in a room will also kill the moths if the combs are exposed in the room. After that, shut them up tightly in the hives, in a room where the moths cannot enter, and you may leave them there a long time. In fact they may be kept several years. But it will do no harm to use mothballs in the hives then.

BUCKBRUSH HONEY FOR WINTER

Buckbrush honey: I would like to hear what you think about it for winter storage. Our buckbrush froze off just when it started blooming, June 1; then on July 1 it began blooming again and kept blooming until September, not very heavy. This honey is a dark amber and is very stiff. Our bees are

suffering bad. I believe I will lose all of my bees. My neighbors say this honey is honeydew and I say it is not honeydew, but we have no bee men here.

WASHINGTON.

Answer—We have seen our bees working on buckbrush, but have never seen any honey that we could say was from buckbrush.

If we had dark amber honey gathered at that time, we would believe that it was honeydew. But we cannot say for sure that it is. Usually honeydew is rather dark and has a taste much less pleasant than any other honey.

If your bees are suffering from such honey it is quite probable that this is honeydew.

We would recommend that you feed the bees sugar syrup just as soon as it will be warm enough for them to take it. It will be better than this dark honey.

UNITING PACKAGE BEEES

1. I am going to buy a few 2-lb. packages of bees in the spring and I will take the queen out of one package and requeen an old colony. How can I unite those bees with two other packages, 1-lb. to each? How much syrup should be fed to each package?

2. Today I noticed some dead brood in front of one of my colonies. It looks like healthy brood. Now what caused this this time of year? Is it chilled brood, or could it be disease?

INDIANA.

Answer—1. To unite bees as you desire, the most important requirement is to feed both the bees that your are to unite and the swarm to which they are united. The idea is to put them in good humour. When bees are fed, where no robbers can annoy them, they become very peaceable. I judge that a two-pound package of bees may be fed sufficiently by giving it a half pound of syrup. After they have taken it, is the proper time to unite them, by smoking them a little.

2. I am unable to say what has caused the brood to die. It is not probable that it is diseased. Perhaps it was chilled. But that is only a surmise. If it continues to die, it may be worth while to send a sample of it to our U. S. Apiarist, Mr. Jas. I. Hambleton, at the Bureau of Entomology, Washington, D. C.

KEEPING FOUNDATION

Please advise whether or not foundation will deteriorate. Have some 2 years old. Keep it in a dry place and away from dirt. Never disturbed since storing. OHIO.

Answer—Comb foundation, if made of pure beeswax, will be just as good at the end of 10 years as the first day, if it is clean and free from dust and dirt.

If it appears to be hard, just expose it to the warmth of the sun, on a table, some fine spring day, for a few minutes, and you will find it as malleable as ever. Don't leave it there too long, it might get too soft.

RYE FLOUR

Is wheat flour and bran a good mixture to feed bees when natural pollen is scarce? Is rye flour better than wheat flour?

My twenty-eight colonies are taking in about one and one-half pounds of flour each day. Is that too much, or should I give them all they can carry in?

ILLINOIS.

Answer—Wheat flour and rye flour are equally good for bees to use in place of

pollen. Some of our educators tell us that the larvae cannot digest the food made out of flour. But we have fed hundreds of pounds and have never seen any of it wasted, or any larvae suffering from this food.

Bran is of no use to them, only to keep them from drowning in the flour, as they get it all over their bodies when they fly over it. But we have found it a better way to simply pack the flour down, in small heaps, with the hands, about a pound or two to each heap, in a box in the sun.

The quantity your bees take is about right for that number of colonies. Whenever you begin to see bees carrying pollen, remove the flour. Some bees would keep on taking it for days after pollen begins, if you let them have it.

OUTDOOR FEEDING

I have several hives of bees and want to feed them this spring, and I want to know how far away one should put the feeding pans from the hives to prevent robbing. I understand about feeding each hive separately, but I want to feed them all together to save time. A year ago I fed a hive close to the hive and the other bees robbed it.

ILLINOIS.

Answer—When you feed bees on the outside, there is always a danger of other bees getting a share of the food, especially if there are neighbors who have bees, also.

If you wish to feed outside, you should bait such colonies as you wish to feed and place the food in some sheltered spot, where you can control it.

However, we much prefer to feed in the hive, because we can then give each colony what we think it should have. We place an empty super over the frames and put the feed in it, usually in a tin can with a few holes in the lid. By overturning the can right over the brood combs, next to the cluster, we can feed them more safely than out of doors. Try it. The holes in the lid should be small enough so that the feed will not run out, but will be sucked by the bees as fast as they can take it. A pan is not so handy to feed as such a feeder.

MOULDY COMBS

Some time ago I wrote to you about one of my swarms of bees that I had in the cellar. We came to the conclusion that they had gathered some honeydew last fall. I took this swarm out of the cellar the other day and examined them and found that some of the honeycomb and pollen were mouldy. I went into the honey house and examined some of the comb that I took out of this same swarm last fall when I put in full combs of honey for the winter. I also found that the honey caps on the combs from this hive were mouldy, but the honey seems to be all right. I also have a lot of other honey in combs in this same house and it is all right.

Is this honey any good for the bees? What would you advise me to do with it?

MINNESOTA.

Answer—This explains your trouble. The quality of the honey is of great importance in wintering bees. It must not be watery, and that is evidently the trouble in this case. But that honey will be all right for spring feeding, when the bees can fly about every day. The mouldy combs will soon be made good by them, if you do not give them to a weak colony. When one gives mouldy comb to a strong colony, in spring, they begin ventilating till they dry it thoroughly.

WAGES FOR BEGINNER

1. How much wages may a beginner (learner), who works in an apiary, expect?
2. How much wages may a man with some experience who works in an apiary expect?
3. Is there any chance to secure a position in the beekeeping line somewhere in the

Pettit's Package Bees Still Satisfy and Look!

Prices Cut to the Bone & the Marrow Taken Out

Two-pound combless package with queen:

3	15	50	100
\$2.75	\$2.50	\$2.40	\$2.25 each

For prices on three-pound, four-pound and five-pound packages, add 75c per pound to these prices. For queenless packages, deduct 70c each. The bees are mostly Italian and the queens are pure bred best honey strain. Satisfaction is guaranteed and payment required before shipping date. Service is our middle name, and we specialize in supplying fruit growers on telegraphic instructions.

Last year we shipped more than four tons of bees, net weight, and are prepared to double that in 1931, having reorganized our facilities and moved to a different shipping center. Correspondence is invited.

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U. S. A.

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American Bee Journal

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 Attractive prices on Queens and
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 excelled by none. No special bee-
 proof protection is necessary when
 working with bees produced by our
 select golden queens.

In filling orders, our queens are
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Satisfied customers in 34 states prove
 there is quality in our product and
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 Write for prices—they're reasonable.

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 ESCAPE
 SAVES
 HONEY
 TIME
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R. & E. C. PORTER, Mfrs.

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(Mention Am. Bee Journal when writing)

Latham's Queens
"She-Sutome" Queens
are line-bred three-banded
Italians
This strain of Italians is unsur-
passed in tongue-length and also
in nectar gathering
 1 untreated laying Queen 80 cents
 6 for \$4 50 for \$31
Allen Latham
Horwichtown
Conn.
 Season May 10 - June 1

South, Florida, California or Porto Rico dur-
 ing the winter time, and the way to get it?
 NEW YORK.

Answer—1. The matter of wages for a
 beginner depends upon several things. The
 greater or less demand for labor is the prin-
 cipal one. But if he is worth, say, \$3.00 as
 an ordinary farm-hand, he is easily worth
 that as a helper in the bee yard. If the price
 of farm labor is less, then he is worth less.

2. A good beekeeper nowadays is worth
 about half the crop of honey he can help
 produce, if he does all the work and boards
 himself. If he has to be boarded by the
 apiarist and if he is to be paid in dollars, I
 should value his time at about \$1,000 a
 year. But this depends so much upon lo-
 cality that we cannot set a positive figure.

3. To secure a position as beekeeper in
 the South, I would suggest advertising for
 it in a bee magazine. It costs but very
 little and usually brings answers.

WATER FOR BEES

Would you please have the kindness to
 inform me if it is of any benefit to give
 water to bees during winter, while they are
 in the basement? I have been told that
 bees have to have water during winter as
 well as summer and that they will be more
 quiet if given water. If so, how is it given
 to them?

I am losing a good many, as they fly out
 and can't find their way back, although I
 am keeping the basement pitch dark and at
 about 40 degrees. MINNESOTA.

Answer—Water is not necessary for bees,
 unless they are breeding, and they should
 not breed in the basement, as it causes too
 much heat and renders them restless.

The degree you mention, 40°, is too low
 for the comfort of the bees. Between 42
 and 50 is best, depending somewhat upon
 how the cellar or basement is arranged. The
 best method of finding the proper degree is
 to keep a thermometer in the basement;
 then keep the bees at the degree at which
 they are quietest. Usually it is easier to
 keep them at a lower degree, or to lower the
 temperature when it is too high. We were
 never able to lower it, however, when our
 winters were mild and the weather was
 warm outside.

As it is now late in the season, you may
 be able to quiet your bees temporarily by
 giving them water. But you may be certain
 that if you do this they will breed and be-
 come more restless soon. It may be given
 by sprinkling it at the entrance or over the
 bees at the top of the hive.

Adventures of the Bee Fairies

(Continued from page 126)

and that dreadful spider! Quick,
 quick, let's drive it away! Oh, the
 poor little bee!"

"Oh, oh!" gasped the little girls.

"And then I knew I was safe, for
 the cruel monster fled to the farthest
 thread of her web, and with a few
 struggles, using all my strength, I
 was able to finally free myself. I
 wanted to thank my rescuers—"

"Oh, I am so glad," cried Doris
 May, unable to keep quiet any longer;
 I am so glad. Mildred and I were
 hunting for my ball. It had bounced
 into the zinnias somewhere. Then we
 saw the spider and the bee. Oh! and
 to think it was you!"

How eagerly the bees gathered
 about the little girls to thank them,
 and how happy Mildred and Doris
 May were to know that they had

really been a help to one of their
 friends.

"Well, I certainly want to thank
 you now," declared Fuzzy Face. "You
 arrived just in time. Another mo-
 ment and it would have been too late.
 I had just given up hope, as I said."

"All bees are not so fortunate,"
 remarked Fleet Wing after they had
 all congratulated both little girls and
 Fuzzy Face.

"No, indeed," returned the latter;
 "it would be difficult to estimate how
 many of us lose our lives through
 spiders each summer, but it is a good
 many. Of course," she added, "spi-
 ders have to live!"

But Robert added decidedly: "Well,
 it may be all right for the spiders to
 live, but I surely don't want one of
 them to make a breakfast of me."

"Nor any of the rest of us,"
 laughed Fuzzy Face.

Neither Mr. Sturdevant Nor the Editor Believe in Fairies

I notice in the American Bee
 Journal for August, page 387, that
 J. H. Sturdevant raises the question
 as to whether or not the fairies saw
 aright when they report that Madam
 Poorsight had lost her sting and still
 was acting as sentinel of the hive,
 stating, "I've always imagined that
 when she stung she also died." I
 also note that apparently the editor
 is of the same opinion, for he rather
 apologizes for me by saying, "Please
 excuse Aunt Laura's poetic license,
 friend Sturdevant." The trouble is,
 as I see it, that both of you have
 been getting your information from
 bee journals and bee books, while
 had you been transformed into
 fairies and gone right into the hive
 you would have gotten at the truth
 of the matter.

But some of you prosaic beekeep-
 ers and editors do not believe in
 fairies, so I will have to produce
 some material "I'm from Missouri"
 evidence. I went to a very small
 colony and allowed about twenty
 bees to sting my leather glove, there-
 by losing their stings. These bees
 were marked with white paint and
 allowed to go back into the hive.
 Five hours after, as far as I could
 count, all of the bees were there.
 Twenty-four hours after, two could
 be found, but later examinations
 failed to locate any.

So it seems to me, Mr. Sturdevant,
 you and the editor should not be-
 grudge Madam Poorsight the little
 service she wished to render her
 colony during her last hours.

Aunt Laura.

Success with Large Hives

"The Dadant System of Beekeep-
 ing," by C. P. Dadant, is a cloth-
 bound book which sells at one dollar
 per copy. This book, explaining the
 management of large hives, can be
 secured from the American Bee
 Journal.

MEETINGS AND EVENTS

Current association meetings and organization notices are published in this department each month. Secretaries and other officers of organizations who wish publicity here should make sure that notices are sent in before the fifteenth of the month preceding publication. Frequently notices are received too late for use and consequently do not appear at all.

International Honey Producers Meet

The annual meetings of the American Honey Producers' League and other related organizations were held recently at the Royal York Hotel, Toronto, Canada. More than two hundred delegates, representing the important beekeeping areas of Canada and the United States, were present to hear the program, which, according to the general consensus of opinion, was the best in the history of the industry.

The Hon. William A. Martin, minister of public health and welfare for the province, extended greetings and expressed the hope that the same organizations would, at some time in the near future, come again to Ontario. Representing the several organizations in annual session, Dr. M. C. Tanquary, president of the League, expressed appreciation for the splendid arrangements made for the entertainment of the delegates and followed with his address as president.

Dr. H. E. Barnard, president of the American Honey Institute, in reviewing the work of the organization for the past year, spoke of the valuable contacts made with various food industries, dietitians, home economics departments, parent-teachers' associations and individuals, and pointed out that the Institute is much encouraged by the enthusiasm shown honey.

Possibilities of a National Honey Week were outlined by Miss Malitta D. Fischer of the American Honey Institute. The interest in honey should be nation-wide, she said, and the adoption of a honey week, at which time special radio talks and articles on honey might be stressed, would do much to inform the public regarding the merits of honey.

Professor Russell H. Kelty, of Michigan, told of the financial support which the Institute is receiving from various trade organizations, beekeepers' associations and individuals, but pointed out that many individuals, associations and concerns directly or indirectly connected with the beekeeping industry and receiving benefit from the work of the Institute are not contributing anything towards its support. He deplored this condition and indicated that if the Institute should be forced to cease work through lack of proper support the injury to the industry would be irreparable.

It was worth the trip to the meet-

ing if for nothing else than to hear "Honey Research at Home and Abroad," by Dr. C. A. Browne, of the U. S. Bureau of Chemistry, Washington, D. C. Dr. Browne in commenting on research on honey cited his investigations not only in America but also in many European countries. To illustrate some of the work on honey clarification being done by his bureau, he showed samples of honey before and after the clarification process. The unclarified honeys were cloudy and amber and the clarified samples were clear and sparkling.

Commenting on honey in the dairy industry, Professor H. A. Smallfield, of Guelph, Ontario, made the comment that certain honeys are particularly valuable due to the flavors which they lend to dairy products, and that there should be as close an association between milk and honey in modern times as in the remote past.

Citing the results of recent research on granulation of honey, conducted at Cornell University, Mr. E. J. Dyce, of Guelph, Ontario, pointed out that the quality of granulated honey depends largely on the size of the granules or crystals, and that by providing certain conditions, which he outlined, the desired type of granulation may be secured. He commented on the action of air bubbles in the honey, temperatures and other factors which influence granulation.

In discussing microbiology of honey, Dr. A. G. Lohead, of Ottawa, Canada, pointed out that the same food properties in honey which make it valuable as a human food also result in its being an excellent media for the growth of yeasts which cause fermentation.

That the beekeeping industry should be reflected in the World's Fair to be held in Chicago in 1933 was the statement made by Dr. A. W. Bitting, in charge of exhibits.

Carbohydrates in health and disease was the topic discussed by Doctors F. W. Hipwell and Angus McKay, of Toronto. They stressed the need for exact facts on the medicinal and food value of honey, indicating that honey should have an important place in the human diet.

George S. Demuth, editor of *Gleanings in Bee Culture*, in discussing the trend of affairs in beekeeping, explained that, although the industry is in the midst of a business depression affecting practically all indus-

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Untested Queens Ready April 1

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Seeds of Honey Plants

For better bee pasture try the following selected plants, which are famous bee plants. Try a packet of seed in your garden and see for yourself how they succeed on your soil:

	Price per packet
Catnip	\$.15
Chapman Honey Plant, or Globe	
Thistle	.10
Horehound	.10
Hyssop	.10
Lavender	.10
Marjoram	.10
Mignonette	.10
Peppermint	.25
Pennyroyal	.10
Phacelia	.10
Purple Loosetrife	.10
Rosemary	.10
Garden Sage	.10
Spider Plant	.10
Thyme	.25

Add 1c per packet for postage.

See Pellett's American Honey Plants for descriptions. A new edition of this book, with many new pictures and much new material, has recently been issued. Price of book, \$5.00.

American Bee Journal

Hamilton, Illinois

Louisiana Southern Bee Farm Route 2, Baton Rouge, Louisiana

We are offering to purchasers of package bees and queens the following worthy considerations:

*Unexcelled Quality Italians
Select Queens*

*All Queens Reared on
Natural Honeyflow*

*Our Breeding Stock Tested
by Northern Honey Producers*

*Packages Absolutely
Droneless*

*Cages—New, light weight
and Convenient of Installation*

*Disease Free Apiaries
Shipped on Date Contracted*

Full Weight and Safe Delivery Guaranteed

Should there be Replacements, we Prepay Transportation

Special Prices to Meet Current Conditions

Investigate Further and Be Satisfied

tries at the present time, a gradual improvement is slightly noticeable. The depression has forced those in the industry to lower cost of production.

James I. Hambleton, senior apiculturist at Washington, D. C., outlined the investigations in beekeeping conducted at the Bee Culture Laboratory. These investigations cover many phases of beekeeping.

Discussing the present status of honey investigation, Dr. E. F. Phillips, of Cornell University, told of the enormous amount of literature on honey in various countries of the world which is of inestimable value, but unfortunately only a scant portion of this has been made available to beekeepers and honey packers.

Throughout the convention daily demonstrations on honey and its uses were given by Miss Malitta D. Fischer, Indianapolis, Miss Mary I. Barber, Battle Creek, Michigan, and Miss Jessie M. Read, Toronto. These demonstrations received a great deal of favorable comment.

Professor V. G. Milum, of Illinois, presented a very interesting paper on "The Honeybee's Span of Life," illustrating this by slides. C. B. Gooderham, of the Dominion Experimental Farm at Ottawa, discussed wintering bees in Canada and suggested that the remarkable development of the industry in Canada may be due largely to the better understanding which beekeepers now have of the wintering problem. He cited the three necessary factors for wintering, which include strong colonies containing young bees, an adequate amount of wholesome stores, and proper protection.

Mr. H. B. Disbrowe, of Guelph, discussed the Watson method of artificial insemination of queens and pointed out that the main progress made on this subject to date has been in improving the technique involved in the operation.

Professor C. L. Farrar, of Massachusetts, discussed the colony's influence on brood rearing, illustrated by slides. He pointed out that many

problems of management are closely associated with brood rearing and that it is well to have an insight into brood rearing because it is also the basis for colony development.

Professor L. T. Floyd led a most interesting discussion on package bees. He said that beekeepers of Manitoba are getting to rely more and more on packages to restock winter losses and to increase the size of their apiaries, and that this condition was applicable to a large section of the Northwest.

Morley Pettit, at one time provincial apiarist of Ontario, and now a commercial honey producer and package bee shipper, cited the developments in beekeeping throughout Canada and the United States during the past two decades. Honey marketing was discussed by James Gwin, Department of Agriculture and Markets, Madison, Wisconsin.

A large exhibit featuring honey and beekeeping equipment, arranged under the direction of G. L. Jarvis, Brantford, Ontario, proved one of the most popular sidelights of the convention. The exhibit was located close to the convention hall and was visited by all beekeepers and hundreds of other visitors during the week. Exhibitors included the American Can Company, F. W. Jones Bee Supply Company, Ruddy Manufacturing Company, J. I. MacArthur,

BOOK your ORDERS EARLY and get a good discount on the best of BEES, QUEENS and SERVICE. Write for booklet

ROY S. WEAVER & BRO., Navasota, Texas

High Grade Package Bees: Tons of Them

Early Baby Bees

Superior Italian Queens: Thousands of Them

Increase your colony production by using our bees and queens. We can supply you good, young, healthy bees and queens at low prices. Our location, Redding, California, makes us the most northern shippers in the state, which is located in the upper end of the Sacramento Valley, where early feed is in abundance, which is entirely necessary to rear young, strong, healthy bees and queens.

Our service cannot be beat: All orders shipped on time; we use the very latest equipment; our cages are light, our feed pure cane sugar.

We are financially responsible to handle any size order. We specialize in large orders.

We will gladly quote you delivered prices upon request. Shipments start about March 20. We guarantee safe arrival and satisfaction in every respect.

OUR HIGH QUALITY AT LOWER PRICES

1 Two-pound package bees with queen	2.35 each
1 Three-pound package bees with queen	3.00 each
25 Two-pound packages bees with queen	2.25 each
25 Three-pound packages bees with queen	2.90 each
100 Two-pound packages bees with queen	2.20 each
100 Three-pound packages bees with queen	2.85 each

Queens, 90c each. Hundred, 80c each
All bees shipped in non-returnable cages

BANTA & WIRE, Redding, California

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American Honey Institute, Kellogg Company, MacDonald Manufacturing Company, Stover's Bees and Queens, and Dominion Glass Company. The exhibitors are to be commended on the excellent quality of their displays.

The banquet and program of entertainment held the evening of February 11, at the close of the second day's session, proved a most enjoyable feature of the convention. Dr. G. I. Christie, president of the Ontario Agricultural College, was chairman of this program.

The delegates were given the opportunity to visit the Ontario Honey Producers' Cooperative warehouse, the Star Publishing Company, and other points of interest, and many delegates took advantage of this.

At the business sessions of the American Honey Producers' League, the American Honey Institute, the Apiary Inspectors of America, and the Ontario beekeepers, regular business was transacted and officers were elected for the coming year. One of the important steps taken was to change the Constitution, by which Canada is now placed on an equal basis with the United States and makes the League truly international in scope.

It has been the custom for the past few years to choose one man for honorary life membership in the League. This year the members at the convention chose Dr. J. H. Merrill, of Raynham Center, Massachusetts, for this honor.

New officers in the American Honey Producers' League include James Gwin, president, Madison, Wisconsin; Floyd J. Buck, vice-president, Walla Walla, Washington, and V. G. Milum, secretary-treasurer, Champaign, Illinois. The directors are C. A. Reese, Columbus, Ohio; D. D. Stover, Tibbee Station, Mississippi; T. W. Burleson, Waxahachie, Texas; H. D. Rauchfuss, Worland, Wyoming, and W. A. Weir, Toronto, Canada.

Officers of the American Honey Institute and Apiary Inspectors of America were reelected.

No decision was made for the 1932 meeting place, but it is expected that this matter will be decided upon soon. J. A. Munro, Fargo, N. D.

Demonstration Apiaries for Missouri

From the Missouri Farm News Service, we learn that the Missouri College of Agriculture, through the Agricultural Extension Service, is planning a series of demonstration apiaries throughout the state. These demonstration apiaries will be operated with the cooperation of the beekeepers and under the management of a representative of the Agricultural College.

Other states have established such apiaries, and this is a very important. (Continued on page 138)

BRINGING BEE SUPPLY BARGAINS AT TODAY'S BOTTOM PRICES

Quality -- Prompt Delivery -- Low Prices!

5 one-story, ten-frame hives with flat covers	\$7.90
5 ten-frame comb honey supers	2.50
5 ten-frame shallow supers 5 1/2" deep	3.15
5 ten-frame full-depth hive bodies	4.40
100 Standard Hoffman brood frames	3.85
Sections 1 1/2" standard or plain sizes, per thousand	8.00
DISPLAY SHIPPING CASES—Standard 1 1/2" complete	\$28.00 per hundred
DISPLAY SHIPPING CASES—Plain, in all sizes	27.00 per hundred

BEE SUPPLIES, ALL FULLY GUARANTEED—regular cataloged material.

All other prices quoted accordingly. Send in list

BIG STOCK ON HAND—ALL PACKED READY FOR SHIPMENT

Charles Mondeng Co., 159 Cedar Lake Road, Minneapolis, Minn.

A Bee Paradise

Minnesota, North Dakota, and Montana, Idaho, Washington and Oregon are developing rapidly in beekeeping and honey production. Thousands of acres of sweet clover and other valuable honey plants promote high yield and fine quality. Much good territory remains to be occupied.

Beekeeping may be developed profitably as a sideline with diversified farming and livestock or as a specialized project. Conditions are equally favorable for bees and livestock. The most valuable feed and forage crops are easily grown and production cost is low.

Beef cattle, dairying, sheep, lambs and wool are all produced on a low cost basis on low priced land. Among the most favorable localities for bees and livestock are the Red River Valley, Milk River Valley, Lower Yellowstone Valley, and Valier Project.

Write for free book on either state and detailed information about bee raising and farming opportunities. Low Homeseekers' Round Trip Excursion Rates.

E. C. Leedy, Dept. J.

GREAT NORTHERN RAILWAY
ST. PAUL, MINNESOTA

Yancey Hustlers in Packages

We have reduced the cost of our bees to the level of honey prices, but we have not sacrificed quality, and we still give you those big, excess weight packages of vigorous young bees, caged from the broodnest, and queens guaranteed to give you good service. You can still make money with our bees.

LET US KNOW YOUR NEEDS. OUR PRICES WILL PLEASE YOU.

Caney Valley Apiaries . . . Bay City, Texas

REDUCED PRICES ON BEE SUPPLIES

The same high quality at new low prices.

Write for our 1931 catalog.

A.H. RUSCH & SON CO.,

Reedsville, Wisconsin

Fresh from Our Yards

Citronelle Package Bees and Queens at Bargain Prices

We give you young, healthy Italian bees, gentle strain, easy to handle. Each package supplied with purely mated queen, true to color and reared from a queen tested for honey gathering qualities.

1 Two-pound package with queen	\$2.75
5 or more packages	2.50
25 or more packages	2.40
100 or more packages	2.25

For three-, four- and five-pound packages, add 75 cents per pound to these prices

SELECT YOUNG QUEENS, postpaid: One at \$1.00; two or more, 80c; five or more, 75c; twenty-five or more, 70c; one hundred or more, 65c each.

Write for delivered prices on package bees by express or parcel post.

Book your order before the rush. No deposit required. Shipments made when you want them and guarantee safe delivery and satisfaction in every way.

CITRONELLE BEE CO., Inc.
Citronelle, Alabama

DECIDE TO BUY

RED STICK

PACKAGES & NUCLEI

Last month we told you why in words. This time we tell you why in the following figures:

	1 to 24	25 up
2-lb. Package	\$2.50	\$2.25
3-lb. Package	3.25	3.00
4-lb. Package	4.00	3.75
5-lb. Package	4.50	4.25
2-fr. Nuclei	3.00	2.75
3-fr. Nuclei	3.75	3.50
4-fr. Nuclei	4.50	4.25

Queens included in above prices

PURE ITALIAN QUEENS 90c EACH

Deduct 60c from above prices if packages or nuclei are wanted queenless. Add postage plus 25c to above prices if wanted by parcel post.

We guarantee our packages and nuclei to be A No. 1 and first class in every respect, and assure you that you cannot go wrong if you place your order with us. Write for our circular.

RED STICK APIARIES
Baton Rouge, Louisiana

1931 Catalog of

Root
QUALITY

BEE SUPPLIES

Now Ready to Mail

Lower Prices New Items Improvements

IT PAYS TO USE

Quality equipment with outstanding advantages, that makes it the best

Root
QUALITY
BEE SUPPLIES

value, at new 1931 reduced prices. There is no substitute for Quality.

The A. I. Root Co. of Iowa
Council Bluffs, Iowa

LET'S PLAN AHEAD!

NOW IS THE TIME
TO PLAN FOR THE 1931 SEASON. LET
US FIGURE WITH YOU ON YOUR RE-
QUIREMENTS OF SECTIONS, HIVES,
FRAMES, FOUNDATION, ETC.

IF YOU HAVE NOT RECEIVED YOUR
COPY OF OUR 1931 CATALOG, WRITE
FOR IT TODAY.

AUGUST LOTZ COMPANY
BOYD, WISCONSIN

Crop and Market Report

Compiled by M. G. Dadant

For this report we have sought information on the following points:

1. How much honey is left on hand?
2. Will honey be sold before the new crop in your locality?
3. In what condition are the bees?
4. What are the moisture and plant prospects at this time?

The variation in reports concerning the amount of honey on hand is somewhat puzzling at first sight. Many localities report the honey almost entirely sold, while others report that a small amount is left on hand which will be moved before the new crop comes in. In contrast there are many reports from the large producing centers of from 50 to 75 per cent of the crop still unsold. Everything indicates that, taking the country as a whole, there will be a considerable amount of honey carried over into the next season.

An interesting thing that comes to light in connection with this report is that the big carry-over will be nearly all in the hands of large beekeepers in a few localities. It is evident that in many places much more honey could be sold before the new crop comes, if beekeepers who have moved their own crop would take the trouble to secure honey elsewhere for retail sale in their own market. A great many beekeepers who have depended largely on the wholesale market are selling at retail, and this results in many people buying honey who have not been in the habit of using it. This has helped the general market a great deal. Some of the smaller radio stations devoted to direct selling are featuring honey and moving a considerable quantity. One station announced over the air that they had sold many thousands of pails at 69c cents each for five-pound pails.

Exports of honey for the year 1930 were less than half the amount exported during 1929. This failure of the foreign market is largely responsible for the surplus still left on hand.

Although honey prices are low, they have not declined in proportion to eggs, wheat, and some other farm products. Fortunately, extracted honey is not perishable and can be carried over without spoiling. On the whole, reporters seem to be somewhat optimistic, with the prospect that any change will be for the better.

CONDITION OF BEES

Never have we had better reports of favorable wintering of bees than now. With very few exceptions, the reporters say that the bees are in excellent condition up to the present time. There are only a few localities where opposite conditions prevail. In the Salt Lake Basin the weather has been steady cold and the bees had a long period of confinement, with the report of poor wintering. In most localities, however, from the Atlantic to the Pacific and from Canada to the Gulf the bees are

said to be in excellent condition where there are sufficient stores.

It is reported, however, that, due to the unusually mild weather, bees have consumed many more stores than is usual at this time of the year, and brood rearing has started several weeks early throughout most of the country. There are numerous reports of brood in all stages early in February, and because of this condition there will be a larger number of colonies than usual which will run short of feed before the new crop comes on.

FEEDING

Beekeepers everywhere should be on the watch with the opening of spring and be ready to feed colonies which are running low on stores. It is apparent that an unusual amount of feeding will be necessary this spring in order to prevent losses. In such a season as this it is the strongest and most valuable colony which is likely to be lost unless the beekeeper is very watchful.

MOISTURE CONDITION

At the time this is written, light rains have fallen over a large scope of country, but up until near the middle of February it has been one of the dryest winters on record over a very large area.

It is too early to make any kind of forecast as to the crop prospects for the coming season. With so large a portion of the country deficient in soil moisture, it is possible that honey plants will suffer as a result of the long drouth, even though there should be normal spring rains. Should the dry weather continue into the next crop season, the results would be very serious indeed.

Since March and April are the months when we can expect rainfall over the greater part of the country, it is to be expected that there will be plenty of moisture in time for the coming season's crop.

In those regions of the Southeast where drouth has been so very severe during the past crop season, as in portions of Arkansas and Kentucky, many bees have starved, and where there has not been liberal feeding there will be a great shortage in bees for the coming year. It is reported that in some sections the indifferent beekeepers have been nearly eliminated by these natural causes.

SUMMARY

Generally speaking, large stocks of honey are still on hand, but these are chiefly concentrated in the hands of large producers and in the principal market centers. More honey is being sold at retail by the beekeepers who peddle their own crops than for several years past. Honey prices are low, but apparently have reached the bottom. Beeswax market is very dull and the future is uncertain. Bees are wintering well, although there is more brood than is usual at this time of year, and care must be used to avoid starvation for lack of stores during the spring brood rearing period.

BURLESON'S ITALIAN BEES & QUEENS For 1931 Delivery

Quality, Quantity and Service considered, they are as cheap as any advertised. You are to be the judge.

T. W. BURLESON & SON
WAXAHACHIE, TEXAS

We Are Cash Buyers of Honey and Beeswax
Submit samples, and best prices, freight prepaid
Cincinnati We also furnish cans and cases.

Fred W. Muth Co. Pearl and Walnut
Cincinnati, Ohio

HAVE YOU MADE YOUR PLANS FOR 1931 ?

They should include the generous use of young, vigorous queens and package bees of good quality to increase production and lower costs. Leaders agree that conditions will be back to normal before the end of 1931. Will you be prepared to get your share of the business?

Now Is the Time to Start—Next Summer Will Be Too Late

Won't you let us quote you attractive prices on your needs for the season? Descriptive circular upon request.

J. M. CUTTS & SONS

ROUTE No. 1

MONTGOMERY, ALA.

Renew Your Subscription

Write for Our Special Club Offers
AMERICAN BEE JOURNAL

Edwin H. Guertin 236 N. Clark St.
Chicago
Buy and Sell All Grades Extracted Honey
References: 1st National Bank, R. G. Dun or
Bradstreet's Commercial Reports.

The BEEKEEPER'S EXCHANGE

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

BEEES AND QUEENS

BUY your queens from Allen Latham, Norwichtown, Conn.

PACKAGE BEES—For April and May delivery. Write for prices, guarantees, etc. The Crowville Apiaries, R. 1, Winnsboro, La.

BOOKING orders for 1931. Combs of brood, \$1 each; combless pounds, \$1 each. Spring reared good Italian queens \$1 each. Gentle, light colored stock. Everything shipped in approved standard packages. Orchard pollinating packages a specialty; fool proof. Fifteen years' experience. Reference given. Literature sent. No Canadian business accepted. Jes Dalton, Kenner, La.

QUEENBEES—Select untested Italian queen-bees, guaranteed in every particular, including safe arrival. Prices: One, \$1.00; 12, \$10.00; 100, \$75.00. First delivery 1931 queens March 1. Edson Apiaries, Gridley, Calif. "Breeders, not Brokers, for 12 years."

FOR SALE—My old reliable three-banded Italians are honey getters. They are gentle, prolific and resistant to foulbrood. With state certificate. One untested, 75c; one tested, \$1.25. Two-pound package, \$3.50. Jul Buegeler, Alice, Texas.

EARLY PACKAGE BEES—Prompt shipment, beginning May 1. Two-pound package without queen, \$2.50; three-pound, \$3.50. Add price of queen if wanted. Choice hardy Italian queens, \$1.00; ten for \$9.00. Safe arrival guaranteed. Birdie M. Hartle, 924 Pleasant St., Reynoldsville, Pa.

FOR high grade golden and three-banded Italian bees and queens, try Carolina Bee Co. strain. They are of beautiful color and real honey gatherers. Untested queens, \$1.00 each; six, \$5.00; twelve, \$9.00; \$65.00 per hundred. Tested, \$1.50 each. Write for prices of package bees. Carolina Bee Co., George Elmo Curtis, Mgr., Kenansville, N. C., Route 2.

A CARD will bring circular of our high grade queens at utility prices. R. V. Stearns, Wharton, Texas.

FOR SALE—Pure Italian package bees. Two-pound package, one to ten, \$2.40; ten or more, \$2.30. Three-pound package, one to ten, \$3.30; ten or more, \$3.20. Without queen, deduct 70c per package. Full weight and satisfaction guaranteed. Certificate of inspection with each shipment. Ten per cent books order; balance before shipment. Clemens Sieber, Box 673, Woodland, Calif.

MY PRICE on package bees is lower than last year. Let me tell you about it. R. V. Stearns, Wharton, Texas.

WARD'S Italians get the honey. Queens and package bees. Queens for May, \$1.00 each. Two-pound package and queen, \$3.00, prepaid; three-pound package and queen, \$4.00, prepaid. C. W. Ward, R. 1, LeRoy, Kansas.

TO READERS of the American Bee Journal: Give me a chance at your orders for bees and queens. Quantity, quality, promptness in shipping, and my customers stay with me. A postal card brings my prices. O. P. Hendrix, West Point, Miss.

CARNIOLANS and Caucasians. Both races very gentle, prolific, long tongue and more dependable workers than Italians. Ask for papers of fuller description. Queens, two-pound packages and eight-frame colonies of both races in season. Albert Hann, Glen Gardner, N. J.

HIGH QUALITY Italian bees. Full weight and prompt service is what you will get if you place your order with me for package bees or queens. No order too small to be appreciated or too large for us to handle. Two-pound packages with queens, \$2.50 each; three-pound, \$3.50. Select untested queens, 75c each. P. M. Williams, Mt. Willing, Ala.

DON'T get stung. Use our high quality Caucasian bees and get an increased production without the pain of bee stings. Get our circular before placing your order. Select untested queens, \$1.00 each; dozen, \$10. Caucasian Bee Co., Repton, Ala.

GOLDEN Italian queens and bees for 1931. Quality higher, but prices lower. Untested, 75c each; \$60.00 per 100. They are still the big, bright, hustling kind. They are guaranteed to please you. Two-frame nuclei or two-pound packages with queens, \$3.00 each; ten or more, \$2.75 each. Health certificate furnished with each package. E. F. Day, Honorville, Ala.

BRIGHT ITALIANS—Large selected queens. Untested, \$1.00, June-September. Roland T. Bousley, Rowley, Mass.

PACKAGE BEES—Before you place your order, send for our circular quoting reduced prices on package bees and queens. Cotton Belt Apiaries, Paris, Texas, R. 2.

FOR SALE—The famous golden Italian queens and bees. One queen, 75c; six, \$4.25; twelve, \$8.00. One 2-lb. package with untested queen, \$3.00. Charges prepaid. Satisfaction guaranteed in U. S. and Canada. E. A. Simmons Apiaries, Greenville, Ala.

BORDELONVILLE APIARIES—Two-frame nucleus with three pounds of bees and a select three-banded Italian queen introduced for \$4.25; ten or more, \$4.00 each. If two pounds of bees with two frames, it costs \$1.00 less; if four pounds of bees with two frames, it costs \$1.00 more. All loss will be immediately replaced. Twenty per cent books your order. Bordelonville, La.

PACKAGE BEES—Italian queens. Write for prices. Priced to meet hard times, low prices of honey. Special designed orchard packages. Health certificate. Satisfaction guaranteed. Homer W. Richard, 1411 Champlinole, Eldorado, Ark.

FOR more pleasure and profit, try our gentle Caucasians. Untested queens ready April 10. One, \$1.25; six, \$7.00; twelve, \$13.00. Safe arrival and satisfaction guaranteed. Tillery Bros., Greenville, Ala., R. 6.

BEEES AND QUEENS—Two pounds of bees with queen, \$2.00; three pounds, \$2.80, in quantities. See my large ad on page 140. H. E. Graham, Box 735, Cameron, Texas.

GOLDEN Italian queens, as good as can be reared with 25 years' experience. Tested, \$1.25; select tested, \$2.00. Untested, May and June: One, \$1.00; two to five, 90c each; six to eleven, 80c each; twelve to 49, 70c each; fifty or more, 65c each. State inspected. Satisfaction guaranteed. D. T. Gaster, R. 2, Randleman, N. C.

IF you want gentle bees, good honey gatherers, my strain of golden Italians will please you. Prices: One untested, \$1.00; two to five, 90c each; six to eleven, 80c each; twelve to forty-nine, 70c each; fifty or more, 65c each. Tested, \$1.25; select tested, \$2.00. Circular on request. Health certificate, safe arrival and satisfaction. Hazel V. Bonkemeyer, R. 2, Randleman, N. C.

PACKAGE BEES—Three-banded Italians. You can save money by ordering your package bees from the Little River Apiaries. Full weight and prompt service to every customer. Bees shipped in light, roomy cages; syrup feeder in cage. Queen shipped inside of package bees in queen cage. We are prepared to do our part in delivering young Italian bees and young Italian queens

to you when you want them, the kind that pay a profit the first season. Two-pound package with queen, 5 to 100, \$2.00 each; three-pound package with queen, 5 to 100, \$2.50 each. Ten per cent books orders, balance before shipment. Safe arrival guaranteed. Health certificate with every shipment. Little River Apiaries, Box 83, Gause, Texas.

FOR SALE

COMPLETE apiary business for sale, in Canada. Address "American Bee Journal."

180 COLONIES bees, comb and extracting equipment. Sell subject to inspection. Chester Keister, Orangeville, Ill.

FORTY colonies Italian bees. Disease free. Cheaper than package bees. Bert Cushman, Northbrook, Ill.

HIGH GRADE BEES IN HIVES—George Schilling, State Center, Iowa.

HONEY FOR SALE

COMB HONEY—Revelation wrapped. Made from clovers. Well cleaned and strictly graded. All weighed into 11-, 12-, 13-, 14-, and 15-oz. net weight. Packed in corrugated paper cases that hold 12 or 24 combs each. Ready for immediate shipment. Write for prices on case, carrier or mixed weight carload. B. I. Evans, Windom, Minn.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

FOR SALE—White clover honey in 60-pound cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

STURDEVANT'S CLOVER HONEY—St. Paul, Neb. Any quantity.

HONEY FOR SALE—All grades, and quantity. H. & S. Honey and Wax Company, Inc., 265 Greenwich St., New York City.

FOR SALE—"Black Hills" fancy extracted honey from sweet clover and alfalfa, in 60-lb. cans, at 8 1/3 cents per pound. Write for prices on large lots. Ernest W. Fox, Fruitdale, S. Dak.

FOR SALE—Extra choice white clover honey, case or carload; also amber. David Running, Fillion, Mich.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans. State quantity wanted and we will quote prices. Samples on request. Dadant & Sons, Hamilton, Illinois.

FOR SALE—Northern white, extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

WHITE Clover extracted honey. Write for prices and samples. Kalona Honey Co., Kalona, Iowa.

WHITE CLOVER comb honey, packed eight cases to carrier. W. L. Ritter, Genoa, Ill., DeKalb County.

NEW CROP shallow frame comb honey, also section honey; nice white stock, securely packed, available for shipment now. Colorado Honey Prod. Ass'n, Denver, Colo.

CLOVER honey, choice, ripened on bees. Satisfaction guaranteed. Case or quantity. E. J. Stahlman, Grover Hill, Ohio.

FOR SALE—Delicious palmetto honey in barrels; also heavy bodied amber. P. W. Sowinski, Fort Pierce, Fla.

HONEY FOR SALE—White and amber honey in 60-lb., 10-lb. and 5-lb. tins. Write for prices. Dadant & Sons, Hamilton, Illinois.

HONEY—We sell the best. Comb in carriers of eight cases each; extracted, basswood, buckwheat, sweet clover, white clover and light amber. Tell us what you can use for prices. A. I. Root Company of Chicago, 234-230 West Huron St., Chicago, Ill.

FOR SALE—Best quality clover honey, \$9.00 per case of 120 pounds; new crop. Virgil Weaver, Merville, Iowa.

FOR SALE—Sweet clover extracted honey; quality and body fine. Thomas Atkinson, Route 6, Omaha, Neb.

FOR SALE—White clover comb, 4¼x4¼ by 1½ sections. C. Holm, Genoa, Ill.

LOWER prices on comb and extracted honey. Write H. G. Quirin, Bellevue, Ohio.

FOR SALE—White clover honey in 60-lb. cans. Write for prices. John Olson, Davis, Ill.

FINE Clover honey, extracted; by case or ton. State amount needed and get prices. L. G. Gartner, Titonka, Iowa.

FINE quality clover-basswood extracted, 7½c; buckwheat, 6½c. A. J. Wilson, Hammond, N. Y.

HONEY—Eight hundred 5-lb. cans, one hundred 2½-lb. cans, clover extracted, 12½c pound. Pilliod Farms, Swanton, Ohio.

SWEET-WHITE CLOVER blend. New cans. Granulated; never heated. Stock that will please. 7½c case lots; deduct 50c per case for freight. Utendorfer's Apiaries, Gaylord, Minn.

CAR LOTS—Fresh liquefied, in 2½- and 5-pound tins, cased f. o. b. cars. Wrap-around label, your design, at 9c pound. California queens, \$1.00 each; bees, \$1.00 pound. California Honey Distributors, Chico, Calif.

MICHIGAN white clover honey of finest quality in new 60-lb. cans. Orval W. Dilley, Grand Ledge, Mich.

FOR SALE—2000 sections fancy at 16c; 2000 sections No. 1, 14c. 4x5x1½-inch sections white clover comb honey. Harry M. Sulzberger, Box 86, Ransom, Ill.

HONEY AND BEESWAX WANTED

WANTED—A car or less quantity of white honey in 60-lb. cans. Mail sample and quote lowest cash price for same. J. S. Bulkeley, 816 Hazel St., Birmingham, Mich.

WANTED—Shipments of old comb and capings for rendering. We pay the highest cash and trade prices, charging but 6 cents a pound for wax rendering. Fred W. Muth Company, 204 Walnut St., Cincinnati, Ohio.

WANTED—Car lots of honey. State quantity, shipping point and price. Mail sample. Hamilton, Wallace & Bryant, Los Angeles, Calif.

WANTED

TO TRADE—Package bees and queens for white honey. T. W. Burleson & Son, Waxahachie, Texas.

GERMAN beekeeper wants a job in an apiary for 1931 season. Fritz Reil, Bathaw, Alberta, Canada.

WANTED—Active young man of good habits to help in our thousand-hive bee business. State particulars and wages desired in first letter. Harry W. Beaver, Troy, Pa.

WANTED—Energetic young men to assist in extracted honey production. Give full details as to personal qualification and experience and wages wanted, with room and board furnished. Schultz Honey Co., Ripon, Wisconsin.

BEEKEEPING for coming season. Had wide experience. Married. Prefer western states. Write T. W. Robinson, 2920 Nassau Ave., Everett, Wash.

WANTED—Strong, active young man as helper in my Michigan apiaries. A good place to learn the bee business. Give age, weight, height, and experience, if any, all in first letter; also state wages wanted, with board and room furnished. Address David Running, Sumterville, Ala.

WANTED—Responsible position in apiary. Honey, package, or queen rearing. References exchanged. Qualified Beekeeper, West Lynn, Mass.

WANTED—Honey in 10-lb. pails, in exchange for chicks. Ames Hatchery, Deerfield, Wis.

SUPPLIES

THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, "Il Sistema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price \$1.00.

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Association, Denver, Colo.

SAGGED COMBS are result of slackened wires caused by wires cutting soft wood of frames. Use metal eyelets. Per 1,000, 60c. Handy tool for inserting eyelets 25c. Postage 3c per 1,000. Superior Honey Co., Ogden, Utah.

FOR SALE—We are constantly accumulating bee supplies, slightly shopworn; odd sized, surplus, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it. Dadant & Sons, Hamilton, Illinois.

MAKE queen introduction sure. One Safin cage by mail, 25c; five for \$1.00. Allen Latham, Norwichtown, Conn.

COMB FOUNDATION—Note these low prices on 20-lb lots: Medium brood, 54c; thin section, 60 cents. Can furnish the new non-sagging foundation. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

FOR SALE—Queen mailing cages. Material, workmanship and service all guaranteed. Write for quantity prices. Hamilton Bee Supply Co., Almont, Mich.

SEND for our latest reduced prices on hive bodies, frames and full line of beekeepers' supplies. Williams Bros. Mfg. Co., 5125 82nd St., Portland, Ore.

"HONEY," the world's greatest health sweet, and our famous Honey-Maple Table Syrup and other products and electric display cases. Get our special to agents and roadside stands and line up for 1931 business boom. We'll help you make \$\$\$ if you just have a little red blood in your veins and guts back of your wishbone. Griswold Honey Co., Madison, Ohio.

WRITE for prices on empty second-hand honey cans. Guaranteed in good condition. State how many wanted. W. F. Straub Laboratories, Inc., 5514 Northwest Highway, Chicago, Ill.

FUSSY foundation fastening avoided. Perfect sections insured by using full sheets of foundation in split sections with the help of spreaders shown on page 71 of February Journal. \$1.00 pair, postpaid. C. L. Snedecor, Chinook, Mont.

BEEKEEPERS—Now is the time to order the handy 3 in 1 feeders, one on each hive. Ends all your feeder troubles. Send for circular and prices. J. E. Will, Independence, Mo.

FOR SALE—Practically new beehives, nailed painted. Hubert Martin, Route No. 3, Corinth, Ky.

MISCELLANEOUS

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership of the Club, including subscription to the paper, \$2.55 (10/6). The Apis Club, Brockhill, London Road, Camberley, Surrey, England.

PLANS FOR POULTRY HOUSES—150 illustrations. Secret of getting winter eggs. You need this book. Write for free offer and sample copy of Inland Poultry Journal, 51 Cord Bldg., Indianapolis, Ind.

MARBLEBOARD BINDER—For back copies of the American Bee Journal. Will hold two years. Keeps your magazines in shape for ready reference. Price only 75c, postpaid. American Bee Journal, Hamilton, Ill.

SELL IT—Honey or bees or queens or second-hand equipment or pet stock or poultry, by advertising in *Gleanings in Bee Culture*, Medina, Ohio, with its more than 20,000 paid subscribers. Rates: 7c a word classified; \$4.20 an inch for display advertising. That great beekeeper, George S. Demuth, is editor, for whose beekeeping teachings 20,000 beekeepers subscribe.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so, send us a list. American Bee Journal, Hamilton, Ill.

VITEX, "Negundo Incisa." The only nectar producing vitex listed by the Bureau of Foreign Plant Introduction. 24- to 36-inch trees, 50c, prepaid. Joe Stallsmith, Galena, Kansas.

WANTED—Machinery for making foundation. What have you? Cash. W. T. Brand, Mitchell, Neb.

EARLY HUBAM—Bushel, \$12; half bushel, \$6.25. Short crop. Order now. P. Petersen, Grower, Kimballton, Iowa.

"VITEX NEGUNDO INCISA"—If you can sell anything, you can sell Vitex. You may be the man I am looking for to be my agent. Earn a few \$ extra this year. Free literature and agent's proposition on request. Charles Mottet, Webb City, Mo.

New California Field Station

The new Pacific Experiment Station, to be located at Davis, in quarters furnished by the University of California, is to be in charge of E. L. Sechrist, now at the Washington office under James I. Hambleton. He will have as associates Frank E. Todd, previous inspector of apiaries for California, and George H. Vansell, who has just resigned as professor of beekeeping at the University of California.

What Washington loses California gains. She will keep Todd and make it easier for his successor, as well as keeping Vansell, and she will gain Sechrist—and that's a good gain. He's an original sunny Westerner with beekeeping experience under four suns and long years of service at Washington.

Our readers will remember Sechrist's work in studies of cost production in the intermountain region, and we understand there is about to be prepared a similar study for the Middle West in the clover region. To our notion, this is the finest constructed piece of management information that has ever been done, and we can only repeat what has already been said in these pages about the practical nature of the work under James I. Hambleton. He senses the beekeepers' problems and he is going after them quietly and effectively. In a few years his office's contributions to the major problems of our industry will be large factors in the permanent reconstruction of beekeeping.

Sechrist goes to the coast with a wonderful opportunity because of climatic conditions and the cooperation of a large beekeeping state. We not only congratulate California, but we are congratulating ourselves as beekeepers.

2000 Colonies of 2500 Nuclei

FOR THREE-BANDED ITALIAN PACKAGE BEES AND QUEENS

Thirty-seven years with the bees

Age, ability and experience account for why our bees are better and service best.

Our pure three-banded strain of Italian bees are carefully tested in our own honey production yards located in Wisconsin, Nebraska, Iowa and western Canada. We know from actual test that they are disease resistant, hardy, long-lived, gentle honey getters.

Book your orders with us. Let us mail you our circular price list.

M. C. Berry & Co., Box 697, Montgomery, Ala.



DISPLAY YOUR HONEY PERFECTLY

Dependable Service on Standard Sizes

Our fluted honey jars are made as per specifications of Standardization Committee of the American Honey Producers' League

Distributed by

DADANT & SONS, HAMILTON, ILLINOIS

and

G. B. LEWIS CO., WATERTOWN, WIS.

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A. G. WOODMAN COMPANY, GRAND RAPIDS, MICH.

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1921 E. Fourth St., Sioux City, Iowa

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HART GLASS MFG. CO., DUNKIRK, IND.

HART

BOTTLES & JARS

Mention the American Bee Journal When Writing Advertisers

Meetings and Events

(Continued from page 133)

tant step in the education of the novice as to the best method of transferring, spring feeding, requeening, manipulations during heavy summer honeyflow, the value of knowing diseased colonies, how to treat diseased colonies, packing for winter, and many other phases so important to successful beekeeping.

Iowa Radio Course

This correspondence course is composed of twelve lessons, which can be taken at any time and proceed as rapidly as the student may desire. We are inaugurating a radio supplement for the correspondence course in the form of discussion of the lesson. These radio talks will also include timely information, so that the average beekeeper should be interested in tuning in to get the discussion. A preliminary announcement and discussion will be given over WOI, Ames, Iowa, operating on a frequency of 640 k., on Monday, March 2, 12 to 12:15 noon. The discussion on the first correspondence course lesson will be given on Monday at the same time and thereafter until the course is completed. The enrollments are considered from anyone who is interested in the correspondence course work. Of course, the radio discussion will be open to anyone who may be interested.

F. B. Paddock, State Apiarist.

Butler Bee Men Meet

Butler County, Pennsylvania, beekeepers met on February 10 with A. T. Keil, E. J. Anderson and William Morris as speakers. P. H. Pfeffer was reelected president; William Morris, vice-president, and Harry Dyke, secretary.

New Louisiana Organization

South Louisiana Honey Producers' Association is the name of a new organization recently formed for the purpose of united action on the part of its members to stimulate better markets for local honey and meeting competition from other regions.

North Carolina Notes

At the recent meeting of the North Carolina Beekeepers' Association the old board of officers was reelected. It was voted to continue membership in the American Honey Producers' League and to support the American Honey Institute to the extent of \$100 for this year. As a means of local advertising, a tire cover has been designed with the following wording:

"Eat More Honey, Nature's Sweet." North Carolina Beekeepers' Association. Buy Today."

These covers, made of best quality material and lettered in attractive colors, will be sold to members at about one dollar each.

Let Us Quote Prices on Your Needs in Package Bees and Italian Queens for Early Spring Delivery

All bees shipped from strong, healthy colonies.

Queens reared in large mating nucleus to insure the best development possible.

Bees shipped in new cages with new feed cans. Cages not to be returned.

Satisfaction guaranteed.

R. E. LABARRE
Shasta County Cottonwood, Calif.

BEEKEEPERS TAKE NOTICE High Quality and Low Price

For 1931 season package bees and young queens

Shipment starts about March 20
Package with young queen:

1 2-lb. -----	\$2.35;	3-lb. \$2.95
10 2-lb. -----	2.25;	3-lb. 2.85
25 2-lb. -----	2.15;	3-lb. 2.75
50 2-lb. -----	2.05;	3-lb. 2.65
100 2-lb. -----	1.95;	3-lb. 2.55

Queens, 80c each; per 100, 65c each.
10% with order, balance before shipment.

Quality, promptness and satisfaction guaranteed

J. W. Di LULLO
Anderson California

Package Bees and Queens

For April, May and June Deliveries

Bright, non-swarming and best honey producers. Pure Italians. All necessary papers with package bees to Canada. No disease. Begin shipping April 1.

Two-pound package and untested queen, one to ten, \$2.65 each; ten or more, \$2.50 each. Three-pound package with queen, one to ten, \$3.25 each; ten or more, \$3.00 each.

Queens—One, \$1.00; six, \$5.00; twelve, \$9.50; fifty, \$35.00; one hundred, \$65.00.

Health certificate. Safe arrival and satisfaction guaranteed.

Taylor Apiaries, Luverne, Ala.

GOLDEN BEES AND QUEENS

Ready for shipment about April 1

Beautiful, gentle and good honey gatherers.

Delivered Prices on Package Bees via Parcel Post or Prepaid Express

2-lb. package, including young laying queen	\$3.75
3-lb. package, including young laying queen	4.75

Ten packages, either size, 25c less each.
Write for large quantity prices

QUEENS

Select (one grade only), one, \$1.00; ten, \$8.00; twenty or more, 75c each. Tested, last fall rearing, \$1.25 each.

We have special made, safe introducing queen cage in which safe introduction is guaranteed, even to a laying worker colony. The price is 50 cents additional per queen when sent in these cages.

Send in your rush orders
No disease. Health certificate

THE GOLDEN APIARIES
Letohatchie, Alabama

John T. Knight, Mgr.

BEES

3 lb. Pkg. Purely Mated Italian Queen \$2.50

Satisfaction Guaranteed

These packages will contain full three pounds (when packed) of young worker bees, with young purely mated Italian queen caged among them. The bees will run from all blacks to all Italians.

This price is made possible for the reason that we have access to the colonies of beekeepers who desire to keep down swarming until the main honeyflow.

HERRON AND STONE, Millerton, Okla.

BUY HIVES THIS NEW WAY

Ready to go to work for you

HOME COMFORT HIVES

complete with queen and bees. PAINTED covers, bodies and bottoms—SHIPPED "K. D."

GUARANTEED



PRODUCTS

Either 8- or 10-frame standard metal-covered hive with Hoffman frames—reversible bottom—2-lb. swarm Italian bees and queen—in sets of five—each \$4.50
Single hives complete as above—each 5.25

Either 8- or 10-frame hive, complete as above, with PAINTED ALUMINUM FINISH—in sets of five—each 5.00
Single hives painted and complete as above—each 5.75

The hive body, metal cover, reversible bottom—all parts exposed to the weather—are painted with Alcoa Aluminum paint, which is the best non-conductor of heat or cold available, and as good a preservative of wood as any finish. It presents a pleasing appearance and can be coated with any other paint. A small can of Alcoa Aluminum is packed with our hives to touch up the nail heads. This paint does not cover up blemishes or defects in the wood; we could not use it were we trying to conceal poor material. Send for quotations now on our complete line of bee supplies. Special prices for March and April.

THE HOME COMFORT CO.

881-85 Newcomb St.

St. Paul, Minn.

Woodman's
Folding Wire
Veil is cool
and comfort-
able, with
clear vision,
and folds flat
when not in
use. Postpaid
Each \$1.00
6 for 5.00
12 for 9.00



NEW BINGHAM
BEE SMOKER



Bingham Bee
Smokers have
been on the
market over
50 years and
have pleased
beekeepers in
many lands.
Made in sev-
eral sizes, of
tin and cop-
per. For sale
by numerous
dealers.

The Universal Honey Extractor

is guaranteed to please you and to meet your every requirement. Built for heavy duty production. Eight shallow or four deep frames at a loading. We have one report of 5,500 pounds being extracted in 9½ hours. Few require one of larger or smaller capacity. It is fully UNIVERSAL. Price \$29.50. Catalogue and printed matter sent on request.

A. G. WOODMAN CO., Grand Rapids, Mich.

"BETTER BRED" QUEENS AND PACKAGE BEES

Now booking orders without deposits

The quality of our queens and package bees is as good as the best and our service is second to none

A postal card will bring our descriptive literature to you. Let us tell you all about our bees; it's free.

Queen Prices		Package Prices	
1 to 5	90c	Two pounds 1 to 25	\$2.50
5 to 10	80c	26 to 50	2.40
11 to 25	75c	51 to 100	2.25
26 to 100	65c	Three pounds 1 to 25	\$3.25
		26 to 50	3.15
		51 to 100	3.00

Have never had any disease here; however, a health certificate accompanies each shipment. Reference: Citronelle State Bank.

CALVERT APIARIES, Inc., Calvert, Ala.

R. G. Holder, Pres.

Package Bees and Queens

A strain of three-band ITALIANS with an unsurpassed record for honey gathering in all parts of U. S. and Canada.

Prices of bees, including pure three-band Italian queen:

	1 to 4	5 to 24	25 to 99	100 or more
2-lb. -----	\$2.30 each	\$2.20 each	\$2.10 each	\$2.00 each
3-lb. -----	3.10 each	3.00 each	2.90 each	2.80 each

Sixteen years of successful shipping. Full guarantee of safe arrival, full weight, and prompt delivery. Health certificate and all necessary papers with all shipments.

H. E. GRAHAM, Box 735, CAMERON, TEXAS

Mention the American Bee Journal When Writing Advertisers

Brown County (Wisconsin) Association Meets

At Green Bay, Wisconsin, January 29, the Brown County Beekeepers' Association enjoyed a splendid talk by James Gwinn, honey marketing representative of the State Department of Agriculture and Markets. Mr. Gwinn announced that he had found a splendid outlet for all their surplus honey and advised them not to sell unless they needed money. The market referred to is Oconomowoc, and any beekeeper who wishes to make use of it should get in touch with County Agent J. N. Kavanaugh, since Gwinn reports that only 50 per cent of a normal crop was produced there last year and the next year's crop will probably be below normal. His marketing suggestions met with approval. He also requested the Association to help the American Honey Institute, which met with a ready response.

The State Department of Agriculture and Markets is suggesting to Mr. Gwinn that Wisconsin become a member of the Mountain States Honey Producers' Association, which proposes to organize the producers of the state into eight groups, with a director for each group as a representative of the state board of directors.

As one of the eight groups, Mr. Gwinn proposes Brown, Calumet, Kewaunee, Manitowoc, Door, Oconto, Marinette and Shawano counties. He said that after a few weeks he would come back to Green Bay to help organization.

The Brown County Association re-elected its officers as follows: Thomas Cashman, president; William Jorgensen, vice-president, and J. J. Kavanaugh, secretary-treasurer—Wisconsin Tel. News.

Lehigh Valley Meeting

The Lehigh Valley Beekeepers' Association recently elected officers for the coming year as follows: J. P. Creveling, president; Thomas A. Berkey, vice-president, and H. W. Dennis, secretary-treasurer.

Wilder Calls Georgia Co-op Meeting March 6

J. J. Wilder has called a meeting of the Georgia Honey Producers' Co-operative Marketing Association, for March 6, to discuss marketing of Georgia honey under a standard grade. The meeting will be held at Waycross.

Much progress has been made in perfecting plans for cooperative marketing the Georgia crop. Mr. Wilder reports that the cooperative will be run separately from the beekeepers' association, but with full support of the latter organization.

L. D. B.

CALIFORNIA

PACKAGE BEES AND QUEENS

HIGHEST QUALITY

PRICES
"In Line With the Times"

Two-pound Package with Queen	1-10	10-25	25-100
Three-pound Package with Queen	\$2.25	\$2.15	\$2.00
	2.80	2.70	2.60

Select young Untested Italian Queens, guaranteed purely mated: One, 75c; 50, 70c; 100, 65c each

We have doubled our capacity in order to be in position to supply our customers Package Bees and Queens at prices that will show them a profit, even in these times of low prices for honey. We ship by express or parcel post, using our NEW light weight cages—none to return—and can save you money in transportation charges on any size order.

J. E. WING

COTTONWOOD

CALIFORNIA

Don't Read This Ad

1931 SPECIAL POSTPAID OFFER ON BUCK'S COMB FOUNDATION IN U. S. A.

Buck's Improved Medium Brood
7 Sheets Per Pound

1 lb.	\$.65
2 lb.	1.25
5 lb.	2.95
25 lb.	13.75

100 lb. 47.00

ORDER NOW

100 lb. Lots by
FREIGHT PREPAID

Buck's Regular Thin Super
28 Sheets Per Pound

1 lb.	\$.75
2 lb.	1.45
5 lb.	3.35
25 lb.	15.75

100 lb. 55.00

This Price Effective 'Till May 15, 1931 Only. All Offers subject to Previous Sales.

Get Our 1931 Catalog. Everything for the Beekeeper.

THE CARL F. BUCK CO. Comb Foundation Specialists **Walla Walla, Wash.**

The Largest and Most Complete Line of Beekeeper Supplies in the Pacific Northwest

SMITH'S SUPERIOR BEES AND QUEENS Will Be Ready for Shipment About April 10

Our prices are LOWER than ever before; our QUALITY bees and queens are as good as you can buy at any price. Write at once for prices and information about our SUPERIOR strain of pure three-banded Italians. A postcard or letter will bring you a SURPRISE, so WRITE us at once. We book your orders without a deposit and hold any date you wish bees shipped.

N. B. SMITH & COMPANY, Calhoun, Alabama

25%

Think what 25 per cent overweight amounts to in a package of bees. Then compare our prices with others. We give full 25 per cent overweight in every package shipped, thereby giving you more for the money than any other shipper. Our packages are made from very light material, which means a great saving to you in express charges. All bees are pure Italians.

Every queen that goes out from THE L. L. FOREHAND APIARIES is reared under the personal supervision of L. L. FOREHAND, who has more than TWENTY years' experience in the commercial queen and package business. WRITE FOR CIRCULAR THAT TELLS ALL ABOUT HOW WE REAR THE L. L. FOREHAND QUEENS.

2-lb. Package with selected untested queen	1	5
3-lb. Package with selected untested queen	\$2.60	\$2.40 each
2-fr. Nuclei with selected untested queen	3.35	3.15 each
3-fr. Nuclei with selected untested queen	2.90	2.75 each
	3.70	3.55 each

Selected untested queens, 75c each; \$4.25 for six; \$8.00 per dozen

Let us quote you prices on large lots

GUARANTEE

We guarantee every package of bees and every queen to reach you alive and in good condition, to give perfect satisfaction or we will replace free of charge or refund your money with any charges you have paid out on transportation.

L. L. Forehand Apiaries, Jesup, Georgia

Kansas Meeting

On February 4 and 5 a very successful beekeepers' program was held during Farm and Home Week at the Kansas State Agricultural College. This program consisted of various steps in cutting the cost of honey production, such as wintering, requeening, and the use of equipment; the planning and construction of honey houses, and the question of marketing. One of the subjects discussed was the manufacture of a new granulated honey which is being advocated by a representative of the Ontario Honey Producers' Association. Talks on beekeeping in a tropical country and also in Europe were given as a contrast to American beekeeping.

There were about fifty of the larger beekeepers of Kansas in attendance at the beekeepers' meeting, and it was considered one of the best programs of Farm and Home Week.

R. L. Parker.

BEES AND QUEENS

QUALITY SERVICE SAFE ARRIVAL
SATISFACTION

Let Us Book Your Order

J. F. McVAY
JACKSON, ALABAMA

Dependable
Service

Dependable
Quality

Knight's Package Bees & Queens

Three-banded leather colored Italians. The best honey gatherers, the best winterers, gentle and prolific. Knowing you will receive your bees and queens just when you wish them and with full weight baby bees, not having gathered a crop honey, is worth many times the price. You should feel confident you will receive your bees on time and know what they will cost delivered your home before placing your order. I have never disappointed a customer.

DELIVERED PRICES, PARCEL POST OR PREPAID EXPRESS

1-lb. Pkg. including Select young laying queen	\$2.75
2-lb. Pkg. including Select young laying queen	3.75
3-lb. Pkg. including Select young laying queen	4.75
10 packages, either size, 25c less each.	
Write for large quantity prices.	
Queenless packages, \$1.00 less.	

QUEEN PRICES

Select (one grade only) 1, \$1.00; 10, 80c each; 20 or more, 75c each before June 1st. Tested queens, last fall rearing, \$1.25.

All queens guaranteed mated pure. They are the best strain to be found after many years of careful breeding.

Should you find a queenless colony this spring send to me for a young queen to save them. I will not disappoint you. Excellent reports of my bees received from all parts of the U.S. and Canada. Safe arrival of bees and queens and perfect satisfaction guaranteed. Furthermore, I make good my guarantee. No disease. Health certificate with all necessary papers accompany shipment. Shipping begins about April 1st.

JASPER KNIGHT

HAYNEVILLE

--

ALABAMA

Choose Labels Wisely



You Can't Go Wrong With
A-B-J Labels

They sell honey and are priced
right. Send for complete catalog.

American Bee Journal
Hamilton, Illinois

THE HONOR ROLL

List of Paid Subscribers to AMERICAN HONEY INSTITUTE
April 1, 1930 to February 10, 1931.

Supporting Members		Minnesota		Connecticut	
*A. I. Root Co., Medina, O.	\$ 750.00	Iver C. Anderson, Lake Benton	\$ 3.00	Connecticut Beekeepers' Ass'n	\$ 10.00
*G. B. Lewis Co., Watertown, Wis.	750.00	L. Burian, Hopkins	3.00	P. T. Walden, New Haven	1.00
*Dadant & Sons, Hamilton, Ill.	375.00	Funk & Son, Hills	5.00	Texas	
*F. W. Muth Co., Cincinnati	187.50	Ernest Goldenman, Zimmerman	1.00	T. W. Burleson, Waxahachie	\$ 25.00
J. G. Paton Co., New York City	100.00	Herbert Kietzer, Vernon Center	5.00	Beekeepers' Item, San Antonio	5.00
*August Lotz Co., Boyd, Wis.	187.50	John F. Swanberg, Parkers Prairie	3.00	New Jersey	
Superior Honey Co., Ogden, Utah	75.00	Ember Wilson, Henning	1.00	New Brunswick Beekeepers' Ass'n	\$ 5.00
*Colorado Honey Producers' Ass'n	187.50	Mrs. D. F. McGuire, Minneapolis	1.00	Howell A. Sholl, Bordentown	1.00
American Honey Producers' League	5.00	L. D. Leonard, Minneapolis	1.00	N. J. Beekeepers' Ass'n, Pennington	25.00
American Can Co.	100.00	Claus Anderson, Excelsior	1.00	Colorado	
Hart Glass Co.	50.00	George D. Huber, St. Paul	1.00	Charles M. Thiele, Salida	\$ 5.00
Hazel Atlas Glass Co.	100.00	Charles D. Blaker, Minneapolis	10.00	Colorado Honey Prod. Association	7.50
Continental Can Co.	100.00	Sisters of St. Benedict, Crookston	7.00	D. W. Spangler, Longmont	7.50
Standard Churn Co.	50.00	Rev. Francis Jager, St. Bonifacius	5.00	May Comstock, Westcliffe	2.00
A. I. Root Co., Council Bluffs, Ia.	75.00	Victor Canaday, Taylors Falls	2.00	S. B. Fralick, De Beque	5.00
Tygart Val. Glass Co., Wash'tn, Pa.	50.00	P. J. O'Connor, Renville	5.00	George S. Wells, Greeley	.78
A. G. Woodman Co., Grand Rapids	100.00	John Sames, Shakopee	2.00	W. C. Evans, Fort Collins	15.00
M. H. Hunt & Son, Lansing	50.00	Sundberg Bros., Fergus Falls	48.00	G. L. Sanders, Grand Junction	1.00
*Sioux Honey Ass'n, Sioux City, Ia.	375.00	W. B. Erickson, Red Wing	20.00	New York	
Stover Apiaries, Tibbee Stat'n, Miss.	50.00	H. Roberts, Winona	2.00	Raymond Jenkins, New Platz	\$ 3.00
A. I. Root Co., Chicago	25.00	E. C. Kiesling, Murdock	1.00	Miss Louise MacMullen, Greenwich	1.00
Marshfield Mfg. Co., Marshfield, Wis.	25.00	C. J. Oldenburg, Henderson	1.00	Walter B. Crane, Dover Plains	5.00
Southern States Beekeep'g Federat'n	5.00	Albert Pesha, White Bear Lake	1.00	E. W. Mange, Oak Ridge Farms,	
Phoenix Hermetic Seal Co. Chicago	50.00	Iowa		Chatham	11.50
Leahy Mfg. Co., Higginsville, Mo.	25.00	Iowa Beekeepers' Association	\$ 50.00	A. Gordon Dye, Rochester	12.00
*Three-fourths of annual subscription		Joseph P. Bidne, Decorah	1.00	George L. Ferres, Atwater	1.00
Michigan		Cherokee County Ass'n, J. Hill, Sec.	5.00	Emil Gutekunst, Colden	5.00
David Running, Filion	\$ 70.00	J. G. Jessup, Council Bluffs	25.00	New Mexico	
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William Reinhold, Flat Rock	28.00	Cecil Lent, Clare	10.00	Kentucky	
W. C. Greenleaf, Muir	5.00	E. M. Cole, Audubon	10.00	G. W. Duley, Smithland	\$ 1.00
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D. A. Davis, Birmingham	42.00	H. R. Pollock, Atlantic	1.00	M. W. Thompson, Toronto	\$ 5.00
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W. S. Wiggins, Muir	10.00	W. E. Wittick, Muscatine	5.00	J. D. Beals, Dwight	\$ 40.00
R. E. Blackman, Portland	25.00	Roy Littlefield, Exira	25.00	Maryland	
K. W. Atkinson, Casnovia	2.00	B. A. Aldrich, Smithland	25.00	Julia G. Andrews, Baltimore	\$ 1.00
Donald Brown, Morrice	1.00	A. A. Beals, Oto	10.00	Indiana	
Richard Schmidt, Bay City, R. 5	1.00	C. L. Brown, Salix	4.00	William L. Heuser, Kouts	\$ 3.00
F. B. Wilde, Wayland	1.00	E. G. Brown, Sergeants Bluffs	24.00	Lee R. Stewart, Newport	1.50
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M. J. & C. G. Beck, St. Johns	4.00	Milo Keller, Correctionville	5.50	Missouri	
C. Porrett, Port Huron	10.00	H. P. Lasher, Cushing	5.00	James E. Lee, Versailles	\$ 1.00
E. Ewell, Ypsilanti	1.00	Newman Lyle, Sheldon	25.00	U. G. Keaster, Holt Co. Beekeepers	5.00
J. C. Kremer, East Lansing	2.00	Harry Mote, Sioux City	5.00	Kansas	
M. T. East, Traverse City	2.00	H. J. Daniels, Ida Grove	4.00	A. V. Small, Augusta	\$ 1.00
D. S. Pearl, Lansing, R. 1	2.00	H. Saupe, Sanborn	2.50	Everett Rairdon, Havensville	1.00
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Theo Keinath, Vassar	3.00	L. A. Thrall, Anthon	12.00	John A. Hon, Piedmont	1.00
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F. E. Patterson, Alpine	1.00	E. Schlemmer, Edgar	1.25	Charles Wray, Middlebury	\$ 2.00
C. A. Post, Alpine, R. 1	1.00	Arthur Smith, Livingston	1.00	Nebraska	
Leon Richter, Grand Rapids	1.00	Frank Beslanowitch, Laurel	1.00	Melvin E. Green, Fordon	\$ 2.50
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Herman Hale, Caledonia	1.00	Gilbert Egli, Joliet	.50	Ed Eckley, Tekamah	40.00
James DeKorne, Grand Rapids	1.00	F. E. Clift, Huntley	15.00	Guy Manning, South Sioux City	13.00
Thomas Fyrlam, Wisconsin	2.00	Arizona		W. J. Manning, South Sioux City	14.00
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C. F. Graver & Son, Saginaw	5.00	Charles A. Brown, Newhall	\$ 10.00	J. G. Green, Lincoln	1.00
L. B. Avery, Clinton	1.00	C. E. Lush, Orange	5.00	J. M. Gregg, College View, Lincoln	1.00
George King, Monroe	1.00	John W. Vasey, Miramar	5.00	Nebraska Beekeepers' Association	13.50
Elmer D. Howe, Azalia, Box 17	1.00	Talbot Winchell, Los Angeles	1.00	Wisconsin	
Newaygo County Beekeepers' Ass'n	5.00	C. E. Foss, El Cajon	1.00	James Gwin, Madison	\$ 5.00
Carl J. Snover, Kalamazoo, R. 9	9.00	C. T. Birch, Orland	2.00	Wisconsin Beekeepers' Ass'n, Juda	25.00
Fred W. Schroeder, Detroit	1.00	Pennsylvania		John Kneser, Hales Corners	5.00
H. P. Christensen, Decatur	2.00	John F. Hawkins, Chester	\$ 5.00	Klem Wilkas	1.00
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A. E. Baranowski, Ravenna	1.00	A. W. T. Doermann, Blue Island	\$ 1.00	Wisconsin Beekeepers' Ass'n, Juda	25.00
M. O. Whitney, Millbrook	1.00	Ivan Whiting, Roscoe	6.00	Ohio	
Walter E. Becker, Detroit	2.00	George W. Lynn, Lockport	3.00	L. A. Mills, Greenville	\$ 2.00
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Norman Small, Jasper	1.00	C. F. Rife, Naperville	1.00	Wyoming	
E. C. Richardson, Adrian	1.00	Illinois State Beekeepers' Ass'n	25.00	Charles H. Ranney, Lander	\$ 25.00
Earl Keller, Medina	12.00	V. G. Milum, Urbana	1.00	George Kraus, Riverton	60.00
Cyrus Cox, Munson	2.50	C. J. Anderson, Morris	1.00	William Mosteller, Casper	9.00
John Stevens	.50	Dadant & Sons, Hamilton	17.00	North Carolina	
N. A. Saunders, Addison	5.00	F. A. Boedecker, Chicago	3.00	N. C. State Beekeepers' Association	\$ 50.00
Ionia County Beekeepers' Ass'n	10.00	Ray Page, McHenry	1.00	Mississippi	
John Ziegler, Petersburg	1.00	R. J. Barthoff, Richmond	1.00	N. C. Jensen, Crawford	\$ 5.00
L. Appold, Sebawaing	2.00	H. M. Klein, Gurnee	1.00		
James Dobson, Suttons Bay	1.00	C. F. Rife, Naperville	2.00		
P. W. Hufford, Petoskey	1.00	Virginia			
Ernest E. Sweet, Keego Harbor	2.00	George Harrison, Jr., Bluemont	5.00		
William B. Ahlert, Muskegon	1.00				

Will your name be on this list in 1931? Subscriptions are asked for at the rate of \$1.00 per ton of honey produced or one-half of one per cent of the crop. No beekeeper should fail to do his share. See editorial page. Send checks to R. H. Kely, Treasurer, East Lansing, Michigan.

The POSTSCRIPT

GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

Apparently our friend Dillon struck a popular note in last month's Journal when he suggested that we look for opportunities to trade honey for things we need, as was the common practice in days long passed. Even my friend J. A. Munro is something of a trader, for he writes that he had a copy of "Studer's Birds of North America" and he has taken it to a book dealer and asked him to swap it for old bee books. When business is dull it is often possible to make a trade when one can't sell for cash. More honey is going into local markets in this way just now than for many years, and as a result there is honey on many tables where it has long been absent.

"Backlotters"

The recent articles concerning the small producers have stirred up some interesting letters. One man complains against the use of the term "backlotter" as inappropriate. One Canadian beekeeper writes that the amateur beekeeper does more to sell honey than the commercial honey producer. He is certainly right. There are few large scale honey producers who do much to stimulate consumption of their product. The man with less than a dozen colonies of bees often grows so enthusiastic that he keeps everybody within reach talking about honey.

About Pie

W. G. Sibley, in his column in Chicago Journal of Commerce, has devoted some space recently to the comparative merits of strawberry and cranberry pies. Will someone please call his attention to the attractions of a real pie—the honey apple pie which Betty Crocker recently extolled over the radio. Sibley apparently is able to discriminate between the various models so far as he has gone, but he simply is not up to date on pie. We await with interest his report after he has tried Honey Apple Pie.

Sidelines

We have numerous letters from beekeepers who are trying to make up for the short crop or the low price of honey by doing some outside work this winter. Many of these letters are rather discouraging because the returns have been low. They remind me of the time when I tried to fill in a dull time by cutting wood. I spent all one day in cutting a half cord, and as the price paid was only fifty cents per cord, I got a quarter for my day's work. Needless to say that I did not long offer any competition to the more skillful woodsmen.

I remember about that time that the late W. Z. Hutchinson was advising as the best thing to go with beekeeping as "More Bees." The indications are that many of our beekeepers are looking forward to meeting their problems in just that way.

A Little Late

That item about Frank Clift sending his check to the Institute, on page 69 of the February issue, was about four months late. Since we always send more copy to the printer than there is room for, that often happens. Frank writes that digging up that dollar a ton didn't hurt "a darn bit," that he passed up a new overcoat to do it and it has turned out that he did not need the coat at all. Open winter in Montana, 70 above when he wrote. So many checks have been going to Kelty for the Institute that he will have to print a book to include them all. Good work. See page 145.

The Best Race

Those articles on races of bees have aroused a discussion that reminds us of old times. The article on page 120 should lead to the importation of Abkhasian bees to see whether they are any better than races already given a trial in this country. The desire to try new things is still dominant with the wide-awake beekeeper.

Bees on the Air

The announcement of Professor Paddock's combined radio and correspondence course in beekeeping at Iowa State College, Ames, Iowa (page 138), has aroused much interest because it is the first of its kind. Going to college at home will be quite the thing within a few years, it seems probable.

What Ails Honey?

That first article on page 105 raises some interesting questions, and I will miss my guess if we don't get a lot of letters from those who have something to add. Take it from me there is nothing wrong with honey; the trouble is all with those who produce honey. If we had the ability to set up a marketing agency sufficient to handle our output as other food products are sold, all the troubles mentioned would disappear. We are still looking for the man who will show us the way.

The Upper Entrance

Those fellows out in British Columbia seem to have started something when they began experimenting with the top entrance hive. Not much attention was paid to it at first, but we are getting enough letters about it now to show that many of our readers are wondering whether there is anything in it. I don't know who thought of it first, but W. J. Sheppard first brought it to my attention. He is a great chap to stir up interest in new things.

Fireblight

Good for Merrill (page 114). He is the first one who has offered any defense of the honeybee against the charge by recent investigators in Arkansas and California that it is responsible for the spread of fireblight. Merrill did some good work himself several years ago, but for some reason the entomologists don't seem to want to find the aphids responsible.

Now Is the Time

A well known economist says that there are better chances right now to lay the foundation for a fortune than have been open since 1893. When everybody wants to sell is the time to buy. When honey is low in price is the time to pick up bargains. Good beekeeping outfits can be had now at a small part of their cost and the buyer will soon find that a fortunate investment often beats a long period of labor. Within a few years we will all wonder how it happened that we overlooked so many opportunities. Look over the bargain counters.

Spring Again

Already letters are coming in telling about the early spring and the way bees are bringing in pollen and starting brood rearing. When the bees are humming among the flowers we renew our enthusiasm and forget our difficulties. There is no business in the world better calculated to make an optimist of a man than beekeeping, even though last year's honey crop is not all sold. The Dutchman's Breeches on the cover is a happy reminder of childhood days when we wandered in the woods picking flowers. Now they are gone from too many localities and are getting rare in others. The bees visit them eagerly when the warm days come.

Bees in the Orchard

Never has there been so much interest in bees for use in the orchard as now. Many letters come from fruit growers who wish to know where to get bees and how to manage them. Most fruit growers are afraid of bees and want as little to do with them as possible. The best solution of the problem is for beekeepers to arrange to provide the bees for orchards within reach and then to move them out at the close of fruit bloom. A sufficient rental can usually be secured to make it a profitable venture for the bee man while saving trouble for the fruit grower. The article on page 116 is typical of the papers at fruit growers' conventions. Frank C. Pellett.